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ABSTRACT

The eighth volume of a 10-volume report, this document focuses exclusively on the National Diffusion Network, examining how the program functions as a service delivery system. The central organizational aspects and practices of the National Diffusion Network are explored within the context of its transformation from a set of independent contractors serving federal policy goals to an enterprising grassroots organization far less dependent on federal leaders for direction and control. Findings from a survey mailed to all funded full-time participants in the National Diffusion Network--including developer/demonstrators, state facilitators, technical assistance contractors, and federal employees--are presented and analyzed. These provide the basis for a concluding discussion of implications for implementation policy. (TE)

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People, Policies, and Practices: Examining the Chain of School Improvement, Volume VIII

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The Infrastructure of Innovation: The Case of the National Diffusion Network

EA 016 487

Volume VIII

The Infrastructure of Innovation: The Case of the National Diffusion Network

James A. Taylor

A STUDY OF DISSEMINATION EFFORTS SUPPORTING SCHOOL IMPROVEMENT

David P. Crandall, Ed.D.
Principal Investigator

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PREFACE

The Study of Dissemination Efforts Supporting School Improvement was a comprehensive, three-year examination of a broad spectrum of federal and state dissemination activities. It included a close look at selected strategies designed to improve schools by promoting the adoption and use of new educational practices developed with federal support. Sponsored by the Office of Planning and Evaluation of the U.S. Department of Education, the study was conducted by The NETWORK, Inc., in collaboration with several other research and development organizations, including the University of Texas' R&D Center for Teacher Education, the American University's Knowledge Transfer Institute, the Center for Policy Research and UCLA's Center for the Study of Evaluation.

The study examined four distinct levels of the educational system: federal, state, external agent, and local. A "zoom lens" design began with an overview of forty-five programs in the U.S. Department of Education that engaged in dissemination or dissemination-related activities. Fifteen of these programs were selected for in-depth analysis at the federal level. At the state level, we examined dissemination activities in ten states representative of the continental forty-eight.

Four strategies, each reflected in a selected federal program, were chosen for in-depth investigation at the local level. The strategies, and their programmatic exemplars, are:

- Interpersonal Linkage of Validated Practices, exemplified by the National Diffusion Network (NDN), including its ESEA Title I subnetwork
- Commercial Distribution, exemplified by the Bureau of Education for the Handicapped Marketing Program
- State Administration of Dissemination, exemplified by ESEA Title IV-C Adoption Grants
- Local Development/Invention, exemplified by ESEA Title IV-C Development Grants

A close look at 146 schools and school districts in the ten states, whose improvement efforts were supported by one of these programs, allowed us to answer three important questions:

1. To what extent are new practices supported by the federal programs being implemented in schools?
2. What factors influence successful implementation?
3. How are policies, conceived at one level, implemented at other levels?

Because three of the four programs chosen rely on implementing practices developed outside the local setting, we were interested in the vehicles employed by the programs for dissemination, particularly the assistance provided by external agencies and individuals.

Focusing-in the lens one more time, we conducted an intensive field study of twelve of our local sites over the course of a school year. Here, we were able to examine the interpersonal and organizational dynamics surrounding implementation as school people worked to incorporate innovative practices.

The study as a whole was a massive effort that required the energies and resources of countless people. Altogether, we:

- interviewed and surveyed over 5,000 educators;
- accumulated over 1500 hours of interview tapes;
- spent over 700 person-days "on the road;"
- made approximately 150 observations; and
- analyzed over 400 documents.

The three years were spent in design (Year 1), data collection (Years 1 and 2), and data analysis (Years 2 and 3).

The master report, People, Policies, and Practices: Examining the Chain of School Improvement, consists of ten volumes which describe the results of the study. Volume I (Setting the Stage for a Study of School Improvement) sets the study within a framework of federal school improvement policies and past studies of these policies. The objectives, design, and research methodologies used in the study are also described.

Volume II (Portraits of the Changes, the Players, and the Contexts) describes what was found in the 146 school districts that comprised our local site sample. Characteristics of the people, the innovations, and the settings are reported, as are the contributions of external assistance and the outcomes accrued from involvement in school improvement.

Volume III (Models of Change) introduces the causal models of the school improvement process that helped us determine what factors influenced success. The findings are reported for several outcomes at both the organizational (school) and individual (teacher) level.

In Volume IV (Innovation Up Close: A Field Study in Twelve School Settings , we examine the dynamics of twelve districts -- varying in experience with the new practices, in community type, and in the scope of their efforts -- involved in improvement efforts supported by the National Diffusion Network or ESEA Title IV-C

Local Development Grants. The volume provides an in-depth picture of the motivations, behaviors and aspirations of school people as new practices are implemented and maintained.

Volumes V, VI and VII analyze the government's role in dissemination for school improvement. In Volume V (Dissemination for School Improvement: An Analysis of Nine Federal Education Programs), we profile nine widely different federal programs sponsored by the then U.S. Office of Education. The volume examines the assumptions underlying the programs, and how these shaped each program's dissemination strategy.

In Volume VI (Dissemination at the National Institute of Education: Contending Ideas about Research, Practice, and the Federal Role), six federal dissemination programs funded by the NIE are examined. We tell the story of the programs' emergence, implementation, and -- to the degree possible -- impact, and discuss implications of the programs for the federal role in dissemination.

In Volume VII (Configuration of Federal and State Dissemination Activities), we present a comparative analysis of federal-state relationships for dissemination and school improvement in our ten sample states. We examine the impact of federal initiatives and other critical influences on the roles and operations of state education agencies.

Volume VIII (The Infrastructure of Innovation: The Case of the National Diffusion Network) examines the communication and rewards structure of a single federal program -- the National Diffusion Network. We examine the NDN as a decentralized service delivery system which has evolved to a grass-roots effort with greatly reduced dependence upon federal leaders for direction and control. Network analysis, based on a census of all members and adjuncts of the NDN, provides interesting insights into a unique federal program.

Volumes IX and X summarize our efforts. Volume IX (Implications for Action) integrates findings from all components of the study, and discusses implications for policy and practice at all levels of the educational enterprise. Volume X, our Executive Summary, provides a distillation of study methods and findings for a general audience, as well as an annotated bibliography of the report series and related study documents.

ACKNOWLEDGEMENTS

The Study of Dissemination Efforts Supporting School Improvement engaged literally a cast of thousands. At the peak of activity, it involved some 5,000 educators from all parts of the country, with a wide range of roles and responsibilities, whose only commonality was the desire to improve the education of our nation's youth. Although it is impossible to personally thank everyone, we pause here to acknowledge their important contributions.

Our Project Officer: Ann Bezdek Weinheimer, for her superb guidance and unending support;

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Our NETWORK Support Team: Pat Bales, Margaret Broderick, Ronna Coppola, Kory Hellmer, Clif Lund-Rollins, Elsa Martz, Nancy Lund, Nick Thorkelson, Annmarie Lenson, and Ruth Anne Shepard who edited, typed, organized, copied, served, drew, retyped, collated, hustled, and cleaned up after us times too numerous to mention, for all of that and more;

And finally, to the people who other studies label "respondents" but whom we considered and related to as "collaborators": over 4,000 teachers, nearly 400 building and district administrators, 100 people in external assistance roles, 50 personnel in ten state departments of education and 100 federal program staff, for their dedication to making schools a better place for people, and helping us learn the good news:

SCHOOL IMPROVEMENT EFFORTS ARE ALIVE AND WELL
IN SCHOOLS ACROSS THE U.S.!

And, on a more personal note:

They said it couldn't be done; parts of it, yes. The whole humongous thing? No way! But we believed, we persevered, and we succeeded.

Managing (producing?) an enterprise of this scale and complexity was not unlike being entrusted with a string of race horses while also being expected to efficiently operate race tracks all over the country. One's charges must run, sometimes for practice, sometimes in claim races, sometimes for fun, and sometimes for substantial purses. At the tracks, stands must be cleaned, popcorn purchased, receipts counted, special events trumpeted, sound systems repaired. Oh yes, add to this the necessity of producing a comprehensive story of each season's successes (and failures), with appropriate statistical detail for the aficionados and photos for the occasional attendee. Perhaps such images will help you connect with the range of reactions I have had to this point, when all that remains of the season is the final manuscript which down-plays the thrills and recalls the tribulations.

Although flashes of Hercules and his labors in the stables come to mind, as do painful recollections of the occasional reluctance of the imported studs to perform as desired, and more than a few false breaks at the gate, overall I am immensely satisfied with both the process and the product of our collective odyssey. On balance, it was a frolic with a wonderful group of thoroughbreds.

All the players in our production performed admirably; their contributions were manifold. Three are worthy of special mention, one whose contribution was the necessary catalyst at the front-end, enabling our adventure to commence and continue; one whose firm hand kept us on our course; and another whose contribution at the back-end ensured the successful conclusion and chronicling of our journey with style and substance. My very special thanks to:

Ann Bezdek Weinheimer, whose courage in championing our unconventional approach launched us on our journey with confidence. During the study, Ann was our trailblazer and guide through the bureaucratic thickets. We benefited mightily from her detailed and hard-hitting critiques, her unwavering support for our efforts through the low moments and her praise at the high ones. Perhaps most of all, we treasure her belief in us and her infinite patience.

Joyce Bauchner, whose truly special ability moved us from abstract conception to earthly operation. Her commitment to task execution and consummate attention to detail served the study better than the best Master Sergeant. (Plus she's incredibly bright and doesn't smoke cigars.) Her formal titles and responsibilities belie the breadth and depth of her contribution to thinking up and working through this massive endeavor. As she remarked more than once, "Well, no one has ever done this before, but let's get on with it." And we did. My plans and our various teams' intentions, difficult as they were to arrive at, were just the first step. Seeing that they were carried out, by dispersed groups in six locations, on time and budget and in keeping with the overall conception was up to Joyce. Without her we'd still be picking up the stragglers and searching for the lost interview tape.

Susan Loucks, whose capacity for concentration, sustained high quality output and tolerance for my idiosyncracies is surpassed only by her unparalleled modesty, calm and good humor, is the single most important reason that the complex innovation of this study is represented through its master report series and numerous other publications. Individual authors have each made significant contributions in their own right. Weaving individual strands of reasoning into a coherent fabric that is both sturdy and stylish stands as the latest in a string of behind the scenes contributions that have been too often unacknowledged. Hers has been the longest and hardest race of all, because it's been run after the others have bedded down and the spectators have left the track. Had this been a race for the roses, the bouquet would belong to Susan.

Each has contributed in a special way to my realizing a major dream. From a field of exceptionally talented thoroughbreds, they have been a trio of true believers. Without these three, it wouldn't have happened; with them, I would try anything.

David P. Crandall, Ed. D.
Principal Investigator

SUMMARY: VOLUME VIII

Volume VIII focuses exclusively on one particular federal dissemination program, the National Diffusion Network, examining how the program functions as a service delivery system. Hypothesizing that the NDN constitutes an "open system," the volume explores its central organizational aspects and practices within the context of its transformation from a set of independent contractors serving federal policy goals to an enterprising grass-roots organization far less dependent on federal leaders for direction and control.

The analysis of the NDN is designed to answer five specific questions about the delivery system:

-- What is a service delivery system?

-- How has the grass-roots nature of the system affected policy objectives?

-- What rewards do participants derive?

-- How can the structure of this system be characterized?

-- What can we learn from the NDN?

To answer these questions, the application of theory to the development and maintenance of the NDN is combined with a network analysis of survey data gathered from NDN participants.

The survey included all Developer/Demonstrators, State Facilitators, technical assistance contractors, and federal employees, with every funded participant in the NDN being mailed a questionnaire. The overall response rate is 69%, with the typical respondent having 7 years of post-secondary education and 3.5 years association with the NDN.

The questionnaire was developed to measure (a) perceptions of the NDN goals and how these perceptions differed from those of federal policy makers; (b) level of participation and receipt of rewards from participation; and (c) the communication network among participants on four dimensions -- communication about the work of the individual, new ideas, social topics, and the identity of opinion leaders.

The results of the study indicate that the NDN is an integrated service delivery system which provides an important and successful example of federal-state-local collaboration. The NDN suggests that by assuming (1) people will act responsibly, (2) practitioners have the expertise to direct change, and (3) the federal government can play a coordinating rather than power broker role -- the federal government can effect significant change with relatively few resources.

The implications for policy implementation which can be drawn from the study's findings include:

- The federal government can share power; when federal personnel believe that their actions have significant meaning, they may well be more ready to make political compromises that promote the quality of service delivery.

- The distribution of innovation can occur through designed communication networks. If participants are given some control over the character of the innovations diffused, are actors worthy of respect in their area of expertise, and are provided opportunities to communicate, it is possible to construct an effective dynmamic that leads to (but is not itself) a network.

- Continuity of the delivery system is important in order that personnel have the necessary time to become experts in the field.

- Joint planning involving participants as well as federal employees is also an important factor.

- A reduced public role for the federal government can be successful when thoughtfully constructed. NDN's representatives to its audiences are not members of a federal bureaucracy, but members of the audience, or people with whom the audience can identify.

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Introduction

The purpose of this component of the research effort is to consider the experiences of the National Diffusion Network (NDN) as a service delivery system. The NDN is a unique confederation of federal, state, and local educational personnel. Its purpose is the dissemination and implementation of school improvement practices (innovations) developed with federal seed money.

A great deal has been discussed in other volumes of this report series about the mechanics of transfering innovations between NDN personnel and local schools (Loucks, Bauchner, Crandall, Schmidt & Eiseman, 1982a; Loucks, Cox, Miles, Huberman & Eiseman, 1982). We will not dwell on these issues. Here our attention is directed towards the nature of the NDN itself. The question of how the NDN functions as a service delivery system is important to the dissemination community and to the wider political community. For better or worse, educational decisions are political events, and the administrative labyrinth of education expresses the commonweal through as much red tape as any other governmental agency. But the NDN is different. The NDN began as a confederation of federal program personnel and contractors. It continues its work as an interdependent system of committed individuals, whatever their origin. The thesis of this volume is that the transformation is a product of the communication practices required of program participants. An artifact of these requirements is the development of the NDN as a service delivery system that exemplifies the best in interagency governmental cooperation.

The NDN was established to encourage the use of validated educational products and practices. As originally applied, the concept of educational "network" referred to connections between those who developed educational practices, and those who might meaningfully apply the practices in the daily education of American youth. The network was understood to be a framework to facilitate the communication of innovations (Rogers & Shoemaker, 1971; Taylor, 1977).

At issue here is the transformation of the NDN from a set of independent contractors serving federal policy goals to an enterprising grass-roots system that influences the goals, objectives, and values of the secondary derivations of the original policy. This development occurred over a period of several years, but at the time of the collection of data reported here, the NDN could be characterized as an "open system."

We will argue that to be an open system, a confederation of individuals must exhibit a common set of values, rule-homophyly (a resemblance arising from common ancestry), governed behavior, reward systems, leadership, a sense of identity, and communication linkages; and it must act collaboratively to support the whole idea even at the expense of members (Miller, 1972). Evidence reported here addresses specific questions of homophyly, rewards, and communication network structure among the participants.

The why of this analysis is important. A key issue in modern American politics is federalism, or neofederalism. Neofederalism is a concept which has come to mean a reduction of regulatory control over social policy, the direct sharing of tax revenues, and participation in program design and execution by local governmental agencies. Historically, federalism has implied the direct control of social and economic events by the action of representatives of the federal government. In its best form this leads to a reduction of spending through centralized control, without loss of service. In an era of shifting expectations, however, centralization and the rules that accompany centralized control prevent flexible responses to the contingent circumstances of modern political decision-making. In fact, the rate of change is such that a rule is obsolete at the time it is published. The centralization of control expands the bureaucracy and leads to regulatory events more in line with the needs of the federal government than the beneficiaries of federal programs (Downs, 1967). It has been noted that what plays in Washington does not necessarily play in Peoria. Neofederalism, on the other hand, implies a partnership between the government and those it serves.

At the present time, as at other periods in our history, the right of the federal government to arbitrate events is being challenged. The Department of Education's right to mandate busing, set standards for nutrition, determine basic curriculum issues, and on and on, is contested even by those who are the beneficiaries of the regulations. Americans are uneasy over the right of any agency of the federal government to devise standards and impose them -- whatever the end.

The NDN is a partnership. The NDN connects an agency of the federal government, state bureaucracies, contractors, and local schools. Its members are, by and large, not themselves members of the federal government. Its goal is to provide curriculum choices for schools throughout the country that conform to regulated practice standards and generally accepted principles of statistical review. The sources of the innovations are the developers: development itself was subsidized by the government under any number of social development policies in the Johnson-Nixon eras.

Personnel who participate formally in the NDN are "borrowed." They are teachers, academicians, school administrators, educational specialists, state-level educational bureaucrats, and members of the Department of Education. In many cases, they were plucked from active lives in American schools and given the nation as a classroom.

The use of the services of the NDN also is voluntary. No school is compelled to buy; no state department is ordered to be represented. The dollars are relatively trivial. The degree of administration is low. The numbers of people involved is modest (roughly 500). Yet the impact is staggering. More than 60,000 schools have adopted programs, impacting over 12,000,000 students. Moreover, some of the most innovative uses of NDN services are found in the states that protest federal involvement in the schools.

While the results of the program have been impressive, the gains have not been without problems. The NDN is both a policymaker's dream and a nightmare. It is a dream where it accomplishes the aspirations of the policymaker inexpensively. It becomes nightmarish for the policymaker when the system takes knowledge of itself and sets its own destiny.

In this document the NDN is examined as a system. In particular we ask the following questions:

- What is a service delivery system?
- How has the grass-roots nature of the system impacted policy objectives?
- What rewards do participants derive?
- How can the structure of this system be characterized?
- What can we learn from the NDN?

To answer these questions, we combine the application of communication theory to the development and maintenance of the NDN with a network analysis of survey data gathered from NDN participants.

What is a Service Delivery System?

A system can be said to exist whenever an observed event can be predicted upon the ordered behavior of antecedent events. The judgment or degree of "systemness" depends upon how routinely behavior is ordered to yield an outcome. The concept of "system" can be applied to the behavior of cells within an organism, the behavior of like organisms supporting one another's survival, and the behavior of groups of like organisms participating in an ecology. For biological systems, recognition of the role an organism plays in the system is not a prerequisite to the judgment that events are systematic: the observation of pattern is sufficient.

We apply the concept of system, however ironically, to the organizations we participate in. Unlike the ecology, we recognize the systematic nature of an organizational relationship.

Furthermore, we constrain our behavior to promote the well-being of the whole. As systems, organizations exhibit:

- purposeful behavior -- the object of participants is the realization of some goal.

- patterned outcomes -- through repetitive cycles of behavior, labeled "enactment cycles" by Karl Weick (1969), the desirable outcomes are produced over and over again. In general, the major goal of a system is given as the sum of the desirable outcomes (e.g., so many adopting schools, so much profit, so many widgits), even though the behavior of individual members of the system is always the production of the next unit.

- role differentiation -- to the degree that the goal requires specialization, participants exhibit different behavior.

- structure -- through the interaction of nodes as they engage in production behavior, the whole of the system is itself ordered or structured. The system is said to be "designed" when differentiation is a deliberate nonrandom assignment. Formal structure consists of those roles that are subordinated to rules imposed by the assignee. Informal roles are those behaviors that occur through incidental contact. Given formal patterns of behavior, incidental contact will be repetitious and, over time, indistinguishable from formal, assigned behavior.

A system is simply patterned behavior that supports the attainment of a goal. In that sense, very little of what we do is nonsystematic. What makes systems interesting, and the NDN particularly interesting, is when the system takes on properties not intended by the designer.

A service delivery system is the organization of resources to convert the concepts of policy into activity in a social structure. As such, relations among participants are arbitrated by political concerns. At the heart of any policy is an ideological assumption about what resources will solve a particular problem. In the case of the NDN, the problem is upgrading the quality of American education. An ancillary problem is increasing the impact of federal research and development funds in education. To increase the impact of improved practices, more users have to be identified and invited to use the practices. Presumably, there are several ways to accomplish this. First, a law could be passed which commanded use -- an idea constitutionally unacceptable. Second, products can be packaged and marketed -- an idea which defeats some of the purposes of the original program developers, since there is no control over implementation. Third, individuals can be paid to facilitate the distribution and implementation of practices in ways consistent with original design. This latter option was chosen by policymakers who established the NDN. Once that concept was put

into place, however, the exact nature of the facilitation activity was put into the hands of those who were responsible for doing it. Through successive iterations, their behavior, strategies, and preference orderings became the operational and then the conceptual definition of a policy.

Individuals who plan systems have several major instruments of control at their disposal (Galbraith, 1977). First, system planners can control the behavior of the system by setting standards of goal attainment and increasing or withdrawing rewards, depending upon the degree to which elements of the system contribute to goal attainment. Second, system planners can control the behavior of a system by specifying rules of behavior. Again, rewards are provided or withdrawn, depending upon the individual's degree of compliance.

Open systems differ from closed systems in that open systems experience evolutionary development. The nature of an open system is relatively independent of the initial arrangements of its component parts. Open systems respond to feedback from the surrounding environment in such a way that order and organization increase over time. These processes occur because open systems are self-regulating -- they respond to positive and negative feedback.

We believe that the NDN is an open system. It is a simple matter to demonstrate that, from the start, the NDN had the elements of a formal system: purpose, differentiation, pattern, structure, and rewards-based control mechanisms. What happened to the design of that system over its life span is much more interesting. While remaining dependent upon federal funds, the NDN has grown into a self-regulating system with greatly reduced dependence upon its federal masters for direction and control.

The lesson to be learned is an old one: a rolling stone does indeed gather no moss. If, in developing the new federalism, partnerships between members of the government and the constituencies served lead to self-regulating systems, the resulting systems develop political and economic wills of their own.

Accomplishments of the NDN

This particular document is concerned with the NDN and its organizational practices. We are offering it as an exemplary demonstration of federal policy implementation. Before detailing our analysis, it is important to get a feel for the accomplishments of the NDN.

The National Diffusion Network, launched in 1974, consists of Developer/Demonstrator projects, State Facilitator projects, and federal personnel and consultants who assist these two groups. A State Facilitator identifies school districts within a given state and arranges an opportunity for teachers and educational

specialists from that district to learn about practices that are "approved." An approved practice is made available by a Developer/Demonstrator. A practice might be a mathematics curriculum, an alternative high school, or even an administrative procedure. Any practice represented through the NDN was demonstrated to have been an effective educational technique through statistical analysis. The Developer/Demonstrator, in most cases, was the person who designed the practice originally, and typically was funded for that development through ESEA Title III and Title IV-C seed monies.* The operations of State Facilitators and Developer/Demonstrators are described in sections that follow.

The results of NDN activity, however, speak for themselves. Data reported here are findings from the Study of Dissemination Efforts Supporting School Improvement. This study was commissioned by the US Office of Education as a broad analysis of dissemination policies subsidized by the Department of Education. The NDN is one of the 45 dissemination programs incorporated in the larger study.

The study was keenly interested in the impact of these dissemination programs on classrooms. Did changes in practice actually result from all of this activity? We measured change by identifying the principal components of classroom innovations supported and disseminated by the federal programs, and examining their presence or absence in classrooms which were represented as "adopters." Change was characterized in terms of what a respondent was doing in the classroom after the adoption of a new practice, compared to the teacher's former classroom practice.

A total of 186 classrooms in 48 schools located in 10 states that had adopted NDN innovations were examined. Teachers (users) were interviewed and completed a questionnaire, as did the principal in each building. The average classroom experienced 9.6 units of change on a scale that varied from minus 21 to plus 33. Thirteen percent of the sites had no change, or changed in ways inconsistent with the practices they adopted, while 50% of the sites exceeded a change of 8 units. Eighty-seven percent of the sites experienced some change in the direction of implementation. Finally, 15% of the sites reflected changes of 20 units or more. In a comprehensive analysis, it was discovered that the more different the NDN innovation was from prior classroom practice, the greater the likelihood of successful implementation.

In putting this into perspective, we offer the following additional insights:

- 92% of our respondents intended to maintain their use of the practice or expand it to other classes,

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*It should be noted that while the vast majority of the early Developer/Demonstrators had their origins in Title III/IV-C, the roster has grown increasingly diverse in later years, now representing developments originally sponsored by all the major program offices within the Department of Education, including the National Institute of Education.

- 71% of the respondents indicated that their adoption accomplished all the goals they had set for it, and another 9% stipulated that the practice partially achieved what they had set out to do, and

- 89% of the users felt personally rewarded by their participation.

In addition, we measured the benefits of the new practices for our respondents in a number of ways. We asked our subjects open-ended questions about benefits that they and their students had received for participation. We asked what problems they encountered along the way. To summarize:

- 88% of our respondents reported some kind of direct student benefit,

- 62% of our respondents reported that the level of achievement of their students improved as a result of their participation,

- 55% reported positive changes in student attitudes toward schooling,

- 51% of the administrators reported improved student achievement,

- Of the problems experienced by teachers, 21% reported some difficulties in managing the classroom, 30% reported some difficulties in implementing the new teaching methods, and 30% reported needing more time to work with the new practices, and

- 52% of the respondents indicated that gain in achievement (by their students) was the single most important benefit they received, while 26% indicated that either an improved instructional approach (10%), better organized curriculum (17%), or improved assessment procedures (9%), constituted the major benefit.

We offer the following conclusions. Sizable numbers of schools and districts are adopting exemplary educational practices through the National Diffusion Network, and most are implementing the new practices with considerable fidelity. In turn, adopters report that the benefits of adoption are substantial, and that these benefits outweigh drawbacks by a wide margin. Further, these results are being achieved at costs that are quite modest compared with those of many federal demonstration programs.[1]

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[1]A more detailed report of these and other findings can be found in Volume II of this report series: A Portrait of the Changes, the Players, and the Contexts.

Studying the NDN as a System: Research Methods

In order to study the NDN as a system, a questionnaire was designed and distributed to all NDN members. The items in the questionnaire measured:

- perception of NDN goals,
- understanding of the federal perspective on NDN goals,
- length of NDN service,
- education,
- receipt of prerequisites or rewards,
- satisfaction, and
- the communication network among participants on four dimensions -- communication about the work of the individual, new ideas, social topics, and the identity of opinion leaders.

The questionnaire was mailed to every funded participant in the NDN, including all Developer/Demonstrators, State Facilitators, technical assistance (TA) contractors, and federal employees active in the program. For purposes of this research:

- A Developer/Demonstrator (D/D) is an individual or a project funded to disseminate a specific practice;
- A State Facilitator (SF) is a project director within a state who is responsible for the promotion of NDN products and practices within the state;
- A technical assistance contractor is a consultant who has derived significant revenue through the provision of services (e.g., training, evaluation, consultation) to NDN D/Ds and/or SFs; and
- Federal employees are individuals with direct oversight, policymaking responsibility, or who are charged with promoting NDN services in their area of jurisdiction. Included are project officers, regional educational directors, dissemination specialists, members of the Joint Dissemination Review Panel, and the like.

Three-hundred and seventy-one individuals were identified and mailed a questionnaire. There was no sampling; the entire population was included. Table 1 gives response rates by type of respondent.

Table 1. Return Rates for NDN Census Questionnaire

Respondent Group	Number Distributed	Number Returned	Percent Returned
SF	100	63	63%
D/D	188	137	73%
Technical Assistant	41	28	68%
Federal Employee	42	29	69%

Overall response rate is 69%, a rate considered acceptable for the network analysis section of the questionnaire.

The typical respondent had 7 years of post-secondary education and had been funded by the NDN for 3.5 years. Technical assistance personnel tended to have considerably greater length of service with their host agencies, 7.5 years on the average.

A copy of the questionnaire is included as Appendix A. Essentially, three methods were incorporated. Respondents were given a list of twelve goals for the NDN which were derived from interviews and content analyses of program documents. The goals were to:

1. improve student attitudes toward learning
2. improve teacher attitudes toward teaching
3. assure the use of alternative practices and materials by teachers
4. monitor and evaluate the effectiveness of the dissemination process
5. increase local educators' awareness of the availability of alternative practices and materials
6. develop alternative practices and materials for elementary and secondary schools
7. improve communication among educators
8. raise achievement scores
9. increase the adoption of alternative practices and materials

10. build communication among dissemination contractors

11. provide training and technical assistance to local schools

12. replicate model programs (achieve "fidelity").

Each respondent was asked to rank these goals in terms of their order of preference: first, how important was each goal to their personal work habits, and second, how important was each goal to the program's sponsors (i.e., the federal government)? Data are displayed by role group in the tables that follow. The object was to determine both where people invested their energy, and how different their perceptions of priority were from those of federal policymakers. We obtained information on what contractors thought, and what they thought official policies were. It should be noted that since federal policymakers also responded, we learned what the policymakers thought, and what they thought official policy was. Thus, several interesting comparisons were possible.

The second portion of the questionnaire measured levels of participation and receipt of rewards. Included here were dichotomous items measuring satisfaction, perceptions of leadership roles, opportunities to present papers and attend conferences, length of service, and education.

The third section of the questionnaire measured the communication network. Respondents were asked to specify how much time they spent interacting with all other respondents in the year prior to their receipt of the questionnaire. In the section on network analysis, an explanation of the procedure is provided. Essentially, the technique allowed us to discuss the system characteristics of the NDN as a whole.

Goals of NDN Participants

The issues here are both the goals that members of the system aspire to, and the discrepancy between the goals of members and the goals of federal personnel responsible for the regulation of the system.

Federal documents were analyzed to identify the most frequently mentioned goals of the NDN. The list was compiled and reproduced on the questionnaire. Respondents were instructed to rank the goals, first in terms of how important each goal was to their own activities, and second, how important they felt each goal was to the Office of Education.

By comparing data sets, it can be established how important various goals were to each group of respondents, how discrepant respondents' goals were from what they believed were federal objectives, and what the actual ranking of the items were from federal representatives.

Table 2 lists the average respondent rankings for each goal. There was general agreement that "improving student attitudes toward learning" was important. SFs and TAs (technical assistants) were inclined to view "creating awareness of alternative practices" as the most important goal. There was wide agreement that "providing training assistance" was important. Interestingly, the goal of "increasing the adoption of alternative practices" was seen as less important than "creating awareness" and "improving attitudes" of both teachers and students. One suspects that participants view themselves more as agents of general change and development in schools than as representatives of a particular change. This is somewhat borne out by the fact that "replicating model programs" is not regarded highly by any group; not surprisingly, for TA personnel the goal ranks last.

Attention should be focused on the major discrepancy between federal and NDN personnel. The federal respondents ranked "student achievement" as the second most important goal. To the practitioners in the program, direct achievement benefits are relatively unimportant. Table 3 indicates that all respondents were well aware of how important the Office of Education regarded this goal. Despite this, participants did not believe that achievement was very important to their activities.

A close examination of Table 3 indicates that NDN personnel believe themselves to be more at odds with the desires of federal policymakers than is, in fact, the case. For instance, respondents in all groups, excepting federal, believe that "improving student and teacher attitudes" is of little relative importance to policymakers (rank 11 and 12, respectively). These goals are shown in Table 2 to be at the heart of what federal respondents believe they are trying to achieve: federal personnel rate the goal at the very top.

At the same time, respondents overestimate the importance of goal 4, "evaluating the effectiveness of the dissemination process." TA personnel are accurate in predicting the importance of this goal to department officials, while D/Ds and SFs assign it excessive importance.

In general, the tables indicate that there is a high degree of agreement among all participants on the principal objectives of the NDN program, as held by policymakers. Raw scores on Tables A and B (see Appendix B) reduce discrepancies even further. Most variations among participants in terms of how they ranked the different goals, and in terms of their perceptions of federal goals, are consistent with variations in the roles of the individuals. For instance, federal respondents rate the importance of raising achievement scores considerably higher than any other participant group, as would be expected by their own political constituency. SFs rate "increasing awareness" at the top, as do consultants. Both SFs and consultants have "spreading the gospel" as their principal wisdom.

Table 2. Average Rank Order of Goals in Terms of Perceived Importance to the Respondent

	All	Federal Staff	D/Ds	SFs	Technical Assistants
1. Improve student attitudes toward learning	1	1	1	4	9
2. Improve teacher attitudes toward teaching	3	4	2	3	8
3. Assure the use of alternative practices and materials by teachers	6	8	6	7	6
4. Monitor and evaluate the effectiveness of the dissemination process	8	6	9	10	5
5. Increase local educators' awareness of the availability of alternative practices and materials	2	3	4	1	1
6. Develop alternative practices and materials for elementary and secondary schools	11	11	10	12	10
7. Improve communication among educators	10	10	11	6	4
8. Raise achievement scores	7	2	7	9	11

Table 2. Average Rank Order of Goals in Terms of Perceived Importance to the Respondent (Continued)

	All	Federal Staff	D/Ds	SFs	Technical Assistants
9. Increase the adoption of alternative practices and materials	5	6	5	5	2
10. Build communication among dissmeination contractors	12	12	12	11	7
11. Provide training and technical assistance to local schools	3	5	3	2	2
12. Replicate model program (achieve "fidelity")	9	9	9	8	12

Table 3. Average Rank Order of Goals in Terms of Perceived Importance to the Federal Government

	All	Federal Staff	D/Ds	SFs	Technical Assistants
1. Improve student attitudes toward learning	11	6	10	12	10
2. Improve teacher attitudes toward teaching	12	9	12	10	9
3. Assure the use of alternative practices and materials by teachers	4	4	6	5	3
4. Monitor and evaluate the effectiveness of the dissemination process	5	8	4	4	7
5. Increase local educators' awareness of the availability of alternative practices and materials	2	3	3	2	2
6. Develop alternative practices and materials for elementary and secondary schools	8	10	7	6	6
7. Improve communication among educators	10	11	9	11	12
8. Raise achievement scores	7	1	7	7	4

Table 3. Average Rank Order of Goals in Terms of Perceived Importance to the Federal Government (Continued)

	All	Federal Staff	D/Ds	SFs	Technical Assistants
9. Increase the adoption of alternative practices and materials	1	2	1	1	1
10. Build communication among dissemination contractors	9	12	11	7	11
11. Provide training and technical assistance to local schools.	6	7	5	7	8
12. Replicate model programs (achieve "fidelity").	3	5	2	3	15

Beyond these modest differences, there is substantial consensus on the direction the NDN is taking. The finding of consensus is important, because it supports the notion that the system can grow and develop without becoming dangerously at odds with policy objectives. What probably happens is that the reciprocity principle applies to participants in this type of entity. Since there are few direct reporting relations, almost all relationships depend upon mutual accommodations.

Were one to look at the goals from the original form of the NDN, one would be inclined to rank implementation, adoption, and communication as the principal goals. Through the process of system development, attitude change has come to be the dominant objective. Moreover, attitude change is an objective sustained by federal personnel even though they have reservations about the degree of importance those goals hold within the agencies they represent.

Roles of NDN Participants

To better understand the findings about goals, more detail is needed about what those involved in the NDN actually do. Again, the NDN is composed of two types of funded projects -- SFs and D/Ds (State Facilitators and Developer/Demonstrators). A nationwide network of State Facilitators constitutes the permanent backbone of the National Diffusion Network. Their responsibility is to keep school people in their states (or substate region) alert to new educational practices that may fit their needs, assist them in choosing and trying out appropriate new practices in their own classrooms, provide various resources (e.g., money, materials, specialized help) to facilitate the implementation of the new practices, and help coordinate the collection of evaluation data and monitoring information. By virtue of their location close to local schools in their states, State Facilitators provide a low-energy access point for school people trying to upgrade the instruction offered children. State Facilitators can be thought of as promoting an ongoing process of school improvement by retraining teaching personnel in the use of classroom practices whose effectiveness has been independently validated.

The other funded partner in this school improvement enterprise is the Developer/Demonstrator. These projects have been validated by a Department of Education (ED) panel responsible for reviewing evidence that programs nominated for "exemplary" status are actually effective. (As of October, 1982, nearly 30% of the 362 panel-approved projects were receiving NDN funds.) The D/Ds represent a pool of proven approaches to teaching a broad array of content. The majority of current D/Ds focus on the early years and elementary grades, with a strong basic skills emphasis. A number of other important areas, such as gifted, science, and career education are also represented.

It is important to understand where National Diffusion Network projects come from, and how the network differs from past federal efforts. The vast majority of the D/Ds represent innovations developed by local schools with initial support from federal sources, such as ESEA Title IV-C, Title I, and the Office of Special Education. Many are a part of the array of model demonstration programs begun in the mid-1960s with the support of federal funds.

The use of a demonstration approach to improving classroom instruction is a time-honored tradition. By the early 1970s, however, it was increasingly clear that widespread improvement or change was not being achieved by simply funding demonstrations. Too often, these had a passive approach to outreach and concentrated only on meeting local needs, not on helping others outside the developing school or site to try out and use the new practice. The accumulating experience of program managers, bolstered by a growing consensus of research findings (Berman & McLaughlin, 1975)), led to the conclusion that while better practices were surely being developed, their transfer was not occurring very effectively. The federal investment in instructional innovation was not being translated into cost-effective transfer and widespread improvement in the educational enterprise.

In 1972, the Joint Dissemination Review Panel (JDRP) was created to provide an internal quality control mechanism for the Office of Education -- to better ensure that any federal support for dissemination to a nationwide audience was provided only to projects that convinced a panel of independent experts that the practice was indeed effective (e.g., in improving student achievement or student attitude toward learning). In 1974, the National Diffusion Network was established to support widespread adoption of any projects that passed the panel.

The State Facilitators of the National Diffusion Network supplied the missing link in this approach to school improvement: their mission was to be the active promoters of improved instruction in their states. They offer schools a pool of proven alternatives (the Developer/Demonstrators), help them match up these alternatives to their needs, and help them secure the training, materials, and support needed for an instructional change. Thus, the SFs, by joining up with the D/Ds who themselves now had a mission (and money) for active national outreach, were able to facilitate the transfer of innovations from around the country into their own states. And together, the D/Ds and SFs were able to capitalize on the federal development investment (averaging around $300,000 per project) and realize adoptions of these practices in hundreds of schools in each state at a fraction of the development costs. (Estimates suggest an average of $4,000-$5,000 of federal money supports a typical adoption.)

Over the six years of the NDN's existence, increasingly effective techniques have evolved for reaching potential adopters, informing them about NDN programs, training them, helping solve problems

encountered during implementation, and helping them assess the results. To help all D/Ds and SFs keep abreast of the best in current practice, the NDN has funded an independent technical assistance contractor. NDN officials see this service as especially useful, ensuring that new D/Ds and SFs get access to techniques and insights already developed by experienced members of the network, and helping all members respond to new system priorities.

The federal leadership:

- defines and sustains a mission -- school improvement through training of local educators in validated practices;
- exercises a definitive quality control responsibility -- through the Joint Dissemination Review Panel, which is intended to serve as a kind of benign consumer protector;
- provides a diverse array of proven alternatives -- Developer/Demonstrator projects, which get federal support for their interstate dissemination activities;
- supports other improvement partners -- State Facilitators, whose job is to promote choice on the part of local school people committed to improvement; and
- provides the means -- through technical assistance contractors -- for the funded projects to refine their skills and share their learnings to increase the cost-effectiveness of the entire enterprise.

The system which has evolved is perhaps unique. The federal sponsor, using a flexible and supportive management style, has stimulated educators at the state and local levels to join together to improve the choices offered children in thousands of classrooms. In contrast to so many "top-down" strategies for promoting change, the National Diffusion Network has emerged as a "bottom-out" strategy -- local teachers (D/Ds) teaching other teachers (adopters) with the assistance of close-at-hand process helpers (SFs).

Given this picture, we return to the goal statements for more in-depth discussion. An interesting facet of the goal statements is the general agreement among participants about what is important to their activities. Modest deviations can be attributed to differentiation and specialization of participants.

As noted, it is important for federal personnel to see student achievement as a principal objective. For federal personnel the achievement goal was ranked second. For most other respondent groups, the goal ranked seventh to eleventh. Interestingly, the only group that predicted the federal personnel's point of view was the D/Ds. This can be explained by the requirement that D/Ds conduct evaluations of the impact of their projects on schools. This is a rigorous requirement, and one that clearly points to an

emphasis on student outcomes. Improved achievement for the disadvantaged was at the bottom of the enabling ESEA legislation that produced the entitlements. The rhetoric of achievement continues to dominate the political lives of federal personnel.

D/Ds spend their time promoting their practices. However, adoption of innovations as a goal is subordinated to changing attitudes, providing training, and developing awareness of alternative practices. Replication, a concept that underlies the importance of experimentally validated projects, ranks only 9 among D/Ds.

The system role of the D/D becomes less that of a salesperson of a specific practice than an agent of change in the educational community. The D/D plays the role of communicating the need for educational development to audiences that span the nation.

Presumably, the protection of the system depends more on the conviction within audiences that change is important, than it depends upon adoption in any given instance. The NDN has survived its budget crises, not only because of the adoptions it has brought about, but because its constituency supports its philosophy of awareness and attitude change. The role of the D/D originally was to "sell" programs. That role has been transformed to more of a change generalist, and less of a practice specialist.

The SFs echo the D/Ds' perspective. Their mission is awareness, training and attitude change. They differ from the D/D in the nature of their constituency -- a state -- and in the support the system offers for their role. They are supposed to help identify local needs and fill them with D/Ds. In discussing this point with NDN personnel, it became clear that the overlap in the role of the D/D in local schools is a continuing source of conflict among NDN participants. The question D/Ds ask is what value does the SF have, if his or her role is the one that D/Ds play in the field?

To the TA personnel, awareness and the adoption of practices are most important. This is interesting because, in general, technical assistance personnel have little direct contact with local schools. Instead, the TA personnel instruct, consult, and evaluate NDN practitioners. They are the promoters of the concept of marketing practices within the NDN family.

This complex and dynamic picture of roles and goals is further enhanced when we seek to understand the rewards received by participants in the NDN. In the next section, we describe how individual rewards have helped to shape the open system of the NDN.

Rewards of NDN Participants

The rewards of participation in the NDN are substantial (see Table 4). First, both D/Ds and SFs find rewards in the responsibility they are given for promoting the successful

Table 4. Rewards Reported by NDN Participants

	All Respondents	D/Ds	SFs	Technical Assistants	Federal Staff
Q: Does your work with the NDN provide you with a sense of personal satisfaction?					
Yes	96%	98%	100%	96%	100%
No	4	2	0	4	0
Q: Does your work with the NDN provide you with opportunities for personal growth?					
Yes	95%	93%	95%	96%	100%
No	5	7	5	4	0
Q: Does your work with the NDN provide you with opportunities for professional growth?					
Yes	95%	94%	97%	93%	100%
No	5	6	3	7	0
Q: Has your participation in the NDN provided you with an opportunity to publish your thoughts or views?					
Yes	60%	58%	56%	67%	78%
No	40	42	44	33	22
Q: Have you even been invited to Washington to present your views to the Office of Education?					
Yes	27%	21%	25%	50%	n/a
No	73	79	75	50	n/a
Q: Do you provide leadership in NDN?					
Yes	52%	32%	74%	67%	96%
No	48	68	26	33	4
Q: Did you attend an out-of-state non-NDN convention (e.g. ASCD, AERA, AASA) as a direct result of your NDN activities?					
Yes	58%	66%	42%	43%	74%
No	42	34	58	57	26
Q: Have you ever been a workshop or group leader at national conferences sponsored by the NDN?					
Yes	50%	36%	54%	78%	80%
No	50	64	46	22	20
Q: Have you ever been a workshop or group leader at regional conferences sponsored by the NDN?					
Yes	55%	43%	65%	77%	82%
No	45	57	35	23	18

adoption of innovative practices. Of the respondents, 96% indicated that their job is personally satisfying; 95% indicated that their position enabled them to experience personal growth, and the same number indicated that their position provided opportunities for professional growth. Obviously, these figures are encouraging, compared with the plight of the education community generally.

Nearly all respondents received some specific opportunities to develop themselves: 60% were able to publish their point of view; 65% were offered opportunities to represent their perspective and that of the educational community to the government in Washington; 62% perceived themselves as providing leadership within the NDN; and 58% attended out-of-state conventions. At one time or another, 50% of the group had participated in a national workshop, while 55% had conducted workshops regionally.

For a member of the educational community, the NDN offers strong incentives to encourage effective participation. To those who succeed, there is the opportunity for national exposure, the opportunity to play a leading role within education, and the opportunity to experience a considerable amount of personal satisfaction. All this, without a requirement that one's chosen career -- education -- be forsaken[2].

As Table 4 indicates, the rewards are, informally at least, dependent on seniority and rank. Federal and TA personnel, on the average, conduct more workshops, attend more conventions, are published more, and have better opportunities for leadership than do the SFs and D/Ds in the trenches.

This supports the notion that a hierarchy, or status differentiation, has developed within the system. TA personnel have been with the NDN longest, and their career reward for that service is the opportunity to direct the system. They are called upon to provide advice, consultation, testimony, analysis, and development. The technical assistance staff, in effect, promote the aspirations of NDN personnel to both federal personnel and NDN professionals alike.

This hierarchy is important, because it is the existence of such influence patterns that gives meaning and drive to the career expectations of newer participants. The fact that the system supports individuals whose principal mission is no longer directly tied to practices in local schools, increases the solidarity and commitment to this system of those who aspire to succeed TA personnel.

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[2]A more detailed discussion of the rewards of engaging in such an "external facilitator" role is found in Volume II: Portraits of the Changes, the Players, and the Contexts.

Second, the emergence of the hierarchy increases the ability of contractors (D/Ds and SFs) to influence the direction the system takes. The senior personnel develop the capability to represent grass-roots thinking in policy formulation. This checks the obvious power of federal personnel to exclusively set the tone and direction of NDN participants.

Neofederalism is a call for the increased cooperation between agencies of the federal government and agencies of the local and state government. The barrier to promoting such partnerships is principally the difficulty of creating organizations which encompass the partners in a manner that provides mutual gain, control, and cooperation. Systems of transfer payments designed to accomplish this objective have long been present. An example might be Model Cities, state administration of Aid to Dependent Children, and even state-regulated but federally financed units of the National Guard.

However, except in times of national emergency, these types of transfer payments are largely contractual, and federal involvement occurs through regulation and evaluation. Federal personnel sit on high and are not themselves day-to-day players in the systems they underwrite.

It seems clear from the initial grants announcement that the NDN was intended to reflect a traditional transfer payment program. Grant monies were set aside for SF and D/D projects, and awards were made to autonomous competitors for the funds. The object of the program was to promote the adoption of exemplary practices. What actually took place was that the growth of a system that looks remarkably like a national distribution network appropriate for any commercial commodity. How this happened is an interesting organizational phenomenon.

Examining the Formal Structure of the NDN

We became very interested in both the formal structures and informal aspects of this system. The literature on organizations stresses the dual nature of formal and informal organizational processes (March & Simon, 1958). Formal processes, usually indicated by some organizational chart, specify reporting and delegation relationships (Thompson, 1967). Informal processes refer to the patterns of communication that arrive out of the need of individuals for information (Farace, Monge & Russell, 1977).

The formal structure of the NDN might be characterized as a wheel. Federal personnel are at the center of the wheel from which legitimation for all activity flows. Some of the spokes are D/Ds; some are SFs. In principle, D/Ds are autonomous with respect to one another, and similarly, SFs are autonomous within their own jurisdiction.

The relationship between D/Ds and SFs is formally ambiguous. The SF project is "designed to assist school districts in a given state to find and appropriate exemplary programs among the resource pool of Developer/Demonstrator projects to meet their own specific needs." Entry to a local district (by a D/D) occurs through an SF. Logically, that would imply a quasi-subordinate relationship. However, budget constraints for travel and patterns of success gave D/Ds considerable freedom to choose among SFs, and hence, among local schools. Whether accidentally or intentionally, a system was created that is based upon a delicate, symmetric reciprocity between SFs and D/Ds, with federal personnel at the helm. The various parties were given checks and balances. In reflecting on these balances, one is reminded of the genius who decided that the base path in baseball should be 90 feet. The distance is perfect for the rhythm of the game; any shorter and there are too many runs, any longer and there are too few.

Once this system was set into motion, the allocation of resources became both a technical decision ("Is this the right project for this school?") and a political decision ("Can I muster the resources?").

Over the years, federal personnel ceased to play the dispassionate observer and became more the arbitor of conflict and the advocate of the NDN before its audiences. Government personnel were drawn into the vacuum incurred through the uncertain basis for cooperation between specific D/Ds and SFs.

Points of difference developed over how SFs were to identify schools, how D/Ds carried out follow-up technical assistance, how quality from both sets of contractors was to be assured, and, most important, who was given the credit for success by local schools and states. It is interesting to note that these disputes were acted out by individuals who also were experiencing a great deal of personal satisfaction and growth. Thus, the conflicts did not foster acrimonious debate but rather well-intentioned, thoughtful, political problem-solving.

Problem-solving led to structural changes within the NDN. Over time the organism grew more bureaucratic. The Joint Dissemination Review Panel (JDRP), though established in 1972, had relatively little business prior to the inception of the NDN. This panel evaluated the qualitative and quantitative evidence of a prospective D/D project. The JDRP stamped projects with a "good housekeeping" seal of educational success. Second, contracts were designed and awarded to consulting agencies to provide a variety of technical services. Like any system undergoing development, process control became important. These contractors trained NDN personnel in the technology of dissemination and the theory of the diffusion of innovations, provided assistance in the design of materials, provided evaluation services, and assisted in what can only be called the organizational development of the NDN as a system.

As long-time observers of the NDN, we must note that the quality of the personnel brought to these tasks is astonishing. The NDN was served by key personnel from state governments, regional laboratories and national R&D centers, a broad cross-section of American universities, and the best minds in the dissemination game. Its success is predicated not only upon the participation of these individuals in concert with SFs and D/Ds, but also on the willingness of federal personnel to rest administrative decisions on the advice and council of its contractors. In time, the federal administrators were drawn into the pattern of reciprocation.

Evidence of these events can be found in other phases of this study.[3] In addition, one points to a change in the proposed guidelines for the NDN in 1976. By this time, the JDRP was the formally authorized quality control mechanism. Facilitator and Developer/Demonstrator projects remained basic contractors of the NDN. However, it was noted in the Federal Register that:

> The development of the National Diffusion Network program has benefited from public participation in the decision-making process. During the past three years, state and local education personnel, a representative group of Developer/Demonstrator and Facilitator project personnel and other professionals in the area of dissemination have assisted in developing the National Diffusion Network and have participated in the implementation and operation of the network.

The quality of participation was considered sufficient to waive public hearings on the proposed rule. Moreover, the federal government recognized in its own regulations that it was engaged in a partnership to provide services to the American educational community.

Thus the formal structure of the NDN appeared to be working. Let us turn to examine its informal structure, and in so doing, understand better how the patterns of communication influenced its development as a system.

Examining the Informal Structure of the NDN

By the time of data collection, the NDN system formally consisted of State Facilitator projects in each state and 128 funded Developer/Demonstrator projects. In addition, the system included the Educational Materials Support Center at the Far West Laboratory, CAPLA Associates, a technical assistance brokerage contractor, a variety of consultants, and approximately 42 federal personnel.

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[3]See Volume I: Setting the Stage for a Study of School Improvement and Volume V: Dissemination for School Improvement: An Analysis of Nine Federal Education Programs.

On the informal side, we were interested in the patterns that might emerge from the routine communication among these individuals. To analyze these relationships, we collected network data from each respondent. Network data consist of reports by individuals of the people with whom they communicate. Each respondent was provided a list of all 473 NDN participants. The respondent was asked to indicate how frequently he/she communicated with each individual on the list. The respondent reported this communication on three dimensions: task (ongoing aspects of the person's work with the NDN), innovation (discussions about new ideas or new school practices), and social (discussions about social topics).

In addition, a fourth item asked respondents to indicate whether a named individual was an opinion leader within the NDN. This question was designed to enable us to examine the specific opinions of informal leaders, so that we could make predictions about the directions of the system. As we will show, opinion leaders augment the role of the federal government at the center of the system.

Respondents were asked to estimate their communication contact frequency using the following scale:

Level I -- at least once a year
Level II -- at least once a month
Level III -- at least once a week
Level IV -- at least once a day
Level V -- more than once a day

While the data collection task sounds formidable, in practice it was quite simple for a respondent to complete the questionnaire. To avoid problems of unreliability, most analyses reported in the discussion which follows consider reciprocated responses only (Farace & Mabee, 1980). A reciprocated response is 100% reliable since the link requires independent confirmation from two individuals. It is a case in which Person A indicates that he or she talks to Person B, and Person B independently reports that he or she talks to Person A. An unreciprocated link has Person A indicating that he or she talks to Person B, while Person B makes no such indication. The dropping of unreciprocated links sacrifices some overall structural detail at the gain of precision in the data used in overall analysis. In short, for a relationship to exist, reports must be independent and bi-directional.

The principal method used to analyze network data is a procedure referred to as network analysis (Richards, 1974; Schwartz & Jacobsen, 1977). The concept of communications systems as networks has long been noted in the research literature. Weber (1947), in fact, argued that the essential purpose of organizing is to prescribe the pattern of communication linkages. This prescription is called an organizational chart. We have learned that as organizations have become more complex, the organizational

chart reflects a pattern of delegation, while communication is governed by the needs of individuals for social contact and information (Downs, 1967).

As our understanding of organizational processes has increased, it has become clear that the vast majority of relationships within any social system are not prescribed. Rather, they emerge from reciprocal needs and interests and are composed of overlapping communication relationships.

The original assumption of the NDN was that by providing a structured opportunity for individuals engaged in dissemination to participate and interact, the probability of the success of their efforts would increase. The NDN provides opportunity for individuals to share their experiences and techniques, and to develop a professonal role with visability in a community of peers. As noted, this is the basis for the formation of the NDN as a system, both educational and political. When we speak of network analysis, it is important to note that we are interested not only in the fact of communication, but also in the effect of that communication. To say that participants were professionalized in an endeavor that is without historical precedent, is to say that through their patterns of communication over time, preferences of strategy, behavior, values, and norms emerged and were reinforced.

The consensus on goals (see page 11) illustrates the emergence of a general consensus among NDN system members. The emergence occurs through normative social processes in this "give a little, get a little" role. As people seek out social contact within the framework of peer relations, they influence one another. As reciprocity takes place and preferences emerge, the organism called organization evolves and exercises its will on new people and incumbents alike.

Conventionally, taxonomies of communication behavior in organizations conclude that communication can conveniently be divided into three categories: communication about tasks, communication about change and innovation, and communication about topics of a social nature (Berlow, 1960; Farace, Monge, & Russell, 1977). In attempting to identify the patterns of communication within the NDN, each of these concepts was examined separately. Respondents were provided with a list of 473 NDN personnel and asked to estimate how frequently he or she discussed each of these topics with an individual on the list.

By task we mean communication about the job of the individual as it related to the NDN. Such communication would include giving instructions and discussing budgets and problems as they come up -- generally this can be thought of as discussions about the business. Innovation refers to communication about new ideas within the NDN context. This might mean new school practices, new tactics, or new programs associated with the NDN. By social we mean conversations of a relatively personal nature, for example,

discussions with a colleague that center around personalities, children, marriages -- the gossip mill.

The network analysis method uses interaction frequencies on these three dimensions to detect the underlying organizational structure. Individuals specify their frequency of contact. The data are arrayed into an N by R data set where N is the number of persons in the system and R is the number of reported contacts. Cluster analysis decomposes the matrix. As a result, each individual is assigned a communication role, based upon the individual's position in the reordered data structure and the pattern of the individual's links.

The network analysis routine classifies nodes, or individual members of the system, into one of five possible communication roles discussed below:

1. group members: nodes with more than a minimal percentage (usually greater than 50%) of interaction with other members of an informal group or clique; the group is constructed so that if a single node or link is removed from the group, it will not cause the group to fall apart; and the group is linked by a path that connects all of its members by some minimal number of steps.

2. bridges: nodes who are members of groups but who also are connected to other groups and hence, serve to link two or more groups.

3. liaisons: nodes who link two or more groups but who are not themselves members of any group.

4. isolates: nodes who have no links (type 1 isolates) or nodes who are connected to only one other node (type 2 isolates).

5. others: individuals who cannot be classified according to the above.

In the analyses discussed below, we made it progressively more difficult for an individual to be included in an analysis. Scores were assigned on the basis of the list of Levels on page 25. When a table refers to a Level I analysis, it means that all reciprocated reports of contact -- including those with a frequency as low as once a year -- are included. A Level II analysis means that only scores two and above (at least once a month or more frequently) are included; Level III means three and above (at least once a week or more frequently), and so on. By increasing stringency of the criteria for inclusion, the underlying fabric of power and influence is revealed. Again, the principle of reciprocity guides our thinking. An individual who communicates with another individual as infrequently as once a year has very little direct influence on that individual (except hierarchical authority). As individuals communicate, they

mutually influence the perceptions of one another. As will become obvious, by increasingly concentrating on those individuals who communicate at relatively high (i.e., frequent) levels, one can detect the underlying patterns of opinion leadership.

The analysis shows that these same individuals who communicate with one another at high levels are judged by the majority of the system to be opinion leaders, are opinion leaders in all three network dimensions, and are the individuals of choice -- the individuals with whom the average person desires to communicate.

The concept of opinion leader appears here for the first time. Any system requires direction, orientation -- leadership -- in order to survive. A system in which conventional bases for authority have been stripped away requires the leadership of people in whom others invest trust. A system which embodies the concept of neofederalism is not so much led by the federal government as it is by the aspirations of the participants. They are in turn led by individuals who, through strength of character, provide the ideas that energize the actions of all.

In the section below we look at each network, at the opinion leaders, and at the implications this has for federal programs and policies. Specifically our attention is directed to the locus of authority within the system and the role played by the government.

Analysis of Network Data

Tables 4, 5 and 6 summarize network results. As noted previously, at Level I, all reported contacts are included. At Level II, contacts of a frequency of once a month are included. At Level III, contact frequencies of at least once a week and greater are included. Level IV results are not discussed separately because of an insufficient number of reports. To read the tables, the following definitions are helpful:

- Total number of links: the sum of both reciprocated and unreciprocated communication contacts. The majority of unreciprocated links occur because of reports by subjects of communication with no respondents.

- N of participants: the number of individuals who were reported as communicators on that dimension. This number subtracted from 363 gives the number of true isolates -- individuals with whom no one reports communication.

- Number of reciprocated links: the number of bi-directional reports for purposes of reliability. Most of our analysis considers only reciprocated links.

- Percent of reciprocated links: number of reciprocated links divided by total number of links.

- SL (Structure): a measure of the relative structure of the network. Structure can be taken to be an estimate of the density of connections among participants. An SL value of .22 indicates that the probability of any two individuals being connected is .22.

- Groups: the number of cliques detected by the analysis routine at that level. Values in parentheses give the size of the groups.

Network results strongly support the emergence of a system organized to support the concept of service delivery. Above (pp. 22-23) we pointed to role differentiation on a formal basis; that same differentiation occurs on an informal basis. Table 5 summarizes network results for Task, Innovation, and Social communication at Level I. Table 6 provides the same information for Level II. Table 7 summarizes information at Level III. Level IV information is excluded, due to a lack of sufficient links or substantive conclusions to be drawn.

Table 5. Level I, Reciprocated Only

	Task	Innovation	Social
Total # Links	19,115	8,981	4,667
N of Participants (Connected)	251	201	114
# of Reciprocated Links	7,399	2,840	1,218
% Reciprocated Links	.39	.32	.26
SL (Structure)	.22	.23	.27
Groups	2 (3, 258)	0	3 (5, 114, 4)

Table 6. Level II, Reciprocated Only

	Task	Innovation	Social
Total # Links	3,586	2,299	1,005
N of Participants (Connected)	153	85	39
# of Reciprocated Links	1,044	550	245
% of Reciprocated Links	.29	.24	.24
SL (Structure)	.32	.4	.93
Groups	2 (5, 3)	5 (3, 3, 27, 6, 17)	4 (9, 3, 4, 8)

Table 7. Level III, Reciprocated Only

	Task	Innovation	Social
Total # Links	567	381	104
N of Participants (Connected)	29	18	10
# of Reciprocated Links	207	240	104
% of Reciprocated Links	36.5	63.0	100.0
SL (Structure)	.80	1.2	1.1
Groups	3 (6, 12, 5)	2 (4, 7)	0

Task Networks

Tables 5, 6, and 7 list the summary of network data for Task communication for the first three levels. The majority of all communication by NDN participants is about Task. In Table 5, 39% of links are reciprocated, a relatively high value considering the possible number of links. A high level of reciprocation indicates the subjects are fully aware of the organizational basis for their contacts, and that they keep track of the relationships they

maintain. Structure is 22%. For any system that is low on differentiation, low on the specification of formal roles, and geographically dispersed, this is a very high value. Within the Task network, closer examination reveals a high degree of connectedness among federal personnel (i.e., their average integratedness score is approximately 68%, meaning that 68% of the individuals who talk with a given communicator also communicate with one another). For State Facilitators, the average integratedness value is 46%; for Developer/Demonstrators, integratedness falls to below 30%.

The structure of the network points to hierarchical relationships. When we look at higher and higher levels of constraint, Developer/Demonstrators tend to fall away. Their communication with key actors is relatively sparse, and their communication with one another is infrequent. In the sense of the neofederalism idea proposed above, the real coalitions tend to emerge among consultants, federal personnel, and State Facilitators within cohesive states that have a high degree of educational sophistication.

In reflecting on the results, there appear to be several reasons why State Facilitators and consultants play a significant role in the development of NDN policy and structure. These include their longevity in the system, their need to make federal programmatic activities coherent for their state, and the size of their funding (on the average, SFs receive two to three times the average funding for D/Ds).

In most states, the SF is either a member of the state educational bureaucracy or someone who has been effectively delegated responsibility for implementing state policy. It becomes incumbent upon the SFs to play a role in formulating federal responses to their dilemmas that are consistent with the latitude they are permitted to exercise.

At Level I in the Task network, two groups are observed. One of the groups has 3 participants, the other 258. These results indicate that at its simplest level the NDN is a large undifferentiated mass. The probability of contact is best predicted by a random number. Individuals from one corner of the country are as likely to be connected to individuals at another corner as they are to one another.

At Level II, the number of total links is cut by 85%. This holds true for the number of reciprocated links as well. Structure increases substantially, an artifact of the increasing reliability of strong links. Two groups emerge, although little of importance can be concluded from this.

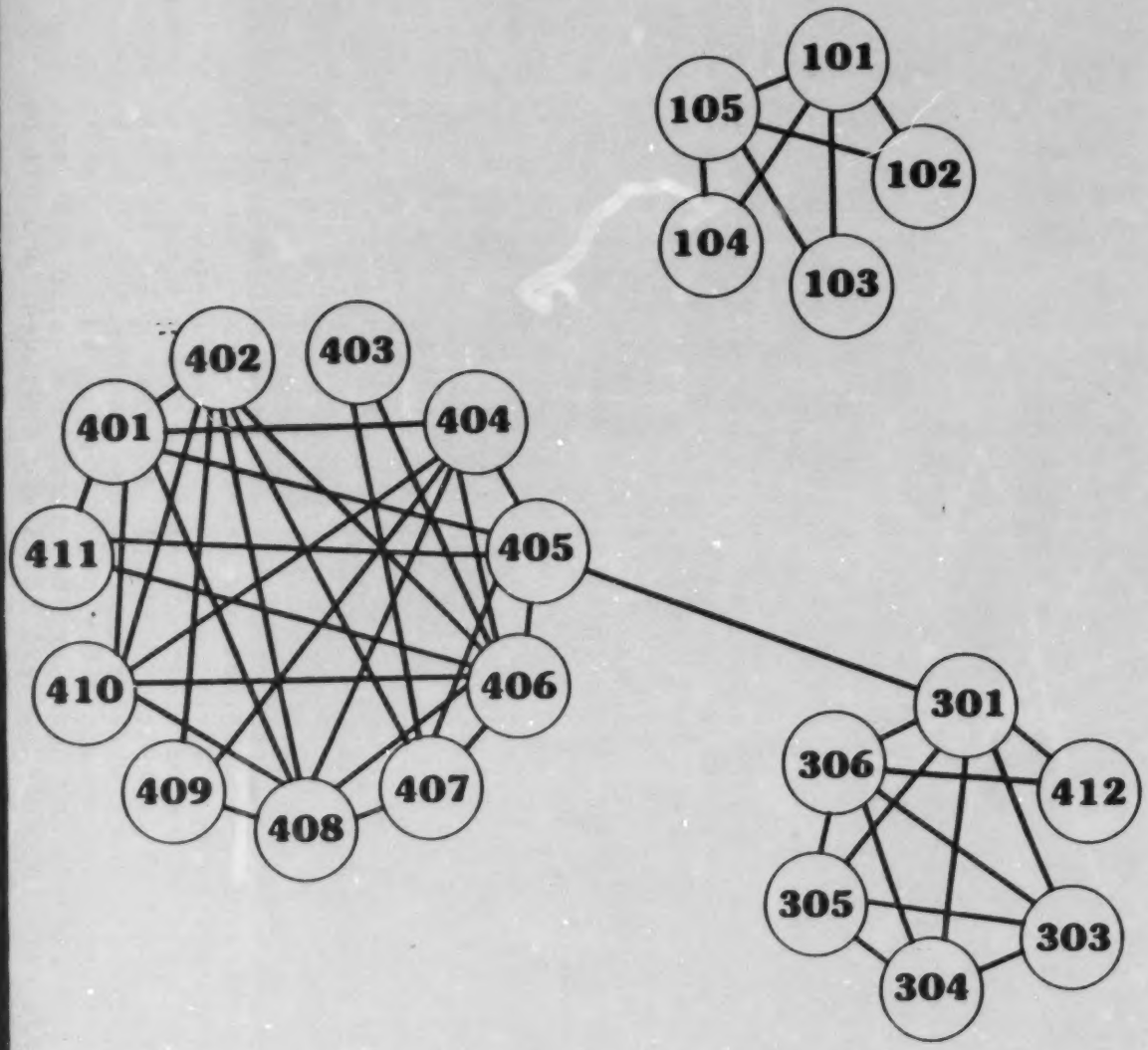
At Level III, individuals communicate at least once a week: these are very strong links. Here only 567 total links remain. One of the surprising characteristics of the NDN is the fact that while there are a large number of total links, there are relatively few strong linkages. Sixty percent of the links that remain occur

among technical assistance personnel, federal personnel, and State Facilitators. The fact that Developer/Demonstrators have, by and large, dropped out of the analysis is an indication of their relatively weak position within the system. Many D/Ds report strong links, but the individuals with whom those conversations occur do not report relationships at that level. Hence there is a lack of reciprocation, and the link drops out.

Despite the fact that most D/Ds do not have strong participation in the Task network, there are D/Ds who have positioned themselves as opinion leaders. Later when we look at opinion leaders, we will see that a few D/Ds energize the system. Still, although the Developer/Demonstrators own the merchandise that ultimately benefits children in schools, they are in the weakest position to promote their own interests.

When we look at the group structure for Task data at Level III, we see three groups. Figure 1 depicts clique patterns among these individuals, with individuals designated by circles. One group is an isolated clique (i.e., there are no strong bridge or liaison ties at this level) consisting of State Facilitator staff from a key Eastern industrial state. Within this state, it is clear that a high degree of integratedness is maintained by the State Facilitator. It should not be surprising that the participants from this state also have one of the largest SF awards, and they enjoy substantial state support. Another group is composed of individuals who work on the educational materials support group, part of the technical assistance system. While one would expect them to be communicating with one another at high levels, it is somewhat discouraging to note their mutual integration, the absence of operational personnel from their clique, and the strong probability of their clique-like structure creating barriers between themselves and the rest of the dissemination community.

Figure 1: Group Members: Task Network, Level III



Technical assistance contracts should operate as liaisons. It will be seen that very few of the technical assistance personnel are considered particularly important opinion leaders. These individuals, through the process of mutual reciprocity, inevitably develop ideas, points of view, and shared perceptions about the role of the NDN and their relationship to it which are at odds with the points of view of participants in the system.

A bridge link connects the technical assistance clique with a clique composed exclusively of 11 federal dissemination personnel. Again, it should be no surprise that federal personnel not only communicate with one another, but do so to a high degree. It is an advantage that federal personnel are sufficiently affiliated that one can count on some degree of mutual planning. However, the absence of any nonfederal advisors in this circle of influence indicates the potential for conflict between the federal clique which seeks to govern, and the participants in the system who seek to escape control.

Innovation Networks

Returning to Tables 4, 5, and 6, one's attention is directed toward the Innovation network. At Level I, Innovation includes about half as many links as Task. The number of participants declines substantially. Most of the D/Ds wash out. While the average individual has 14 reciprocated links in the Innovation networks, the average Developer/Demonstrator has 6.

The percentage of reciprocation is less than that for the Task network, probably because of the ambiguity of the concept of communication about innovation. In a network which exists to communicate innovations, "innovation communication" may be indistinguishable from task. That is, structure for this network is nearly identical to that of the Task network. There are no groups at Level I.

At Level II, the number of links declines by 75% for both total and reciprocated links. The number of participants declines to 85, of which nearly all are federal personnel, technical assistance personnel, and State Facilitators. There are five groups. Group I (3 individuals) is a small special local support group representing three different projects. Group II (3 individuals) is a clique from a single southern state. (Note that this is the second occurrence of a single state clique.) Group III is a substantial clique (27 people) that includes State Facilitators from the Deep South, 8 Developer/Demonstrators, members of the technical assistance brokerage, consultants, and regional federal personnel -- a very pluralistic group. An analysis of the affiliations of these individuals suggests that the group is comprised primarily of individuals who deal with the flow of migrant workers between the northwest and the southwest, and who share common concerns. It is unusual in that it demonstrates the possible structure of a group that epitomizes the partnership concept. All roles are involved, and all participants

acknowledge one another's involvement. Although the clique is sufficiently large that a great deal of diversity is likely to emerge, it is sufficiently small and geographically concentrated, so that the combined influences can have impact.

The fourth clique (Group IV) consists of 6 individuals. It is a group of mid-southern states that is interesting, in that two of its members are judged to be substantial opinion leaders within the NDN at large. Except for proximity, there does not appear to be a conceptual basis for this clique. The last clique (V), consists of 17 members: it includes a group of federal personnel who are joined repeatedly in all of the networks (i.e., Task, Innovation, Social). It is interesting to note that, by and large, the federal personnel who are grouped together are not the federal personnel who are judged to be opinion leaders in directing the system. The clique contains 11 federal personnel, only one of whom is judged an opinion leader by substantial numbers of participants. This is both an interesting observation on grass-roots program formulation and an interesting network finding as well. It is presumed individuals who are seen to cluster together have less time to devote to others. Hence, they are not judged to be opinion leaders. In fact, an insufficient amount of time is spent communicating with practitioners and others to actually influence the system. More on this point in the discussion of opinion leaders.

At Level III (Figure 2) the Innovation network yields two cliques: a subset of the technical assistance unit (4 people) and a subset of a federal dissemination clique (5 people).

Social Networks

The Social network (see Tables 5, 6, 7) as one would expect, has the lowest degree of connectedness. There are only 4,700 total links, of which 1,200 (approximately 25%) are reciprocated. The structure figure increases (100%), and this is not surprising, since reciprocated reports of social relations are based on affiliation. In fact, at Level II, structure rises to 93% and at Level III approximates complete connectedness among individuals making reports. At Level I, only 114 individuals report social contacts; at Level II, 39 (see Figure 3); and at Level III, 10. This is somewhat surprising given the orientation of the NDN toward interpersonal endeavors; we expected that social relations would dominate. By comparison, in a network analysis conducted by the author of a major U.S. corporation with similar degrees of geographic dispersion and equal numbers of participants, social relations involved nearly all participants, and five times as many had reciprocated links. We have two conjectures about the relative lack of social contact. One, given the inherent idealism of the NDN, communication which others might recognize as "social" is perceived as related to task and innovation. Two, informal norms -- possibly derived from concerns about the implication of large numbers of social contacts publicly reported in a study of a federal project -- may have caused individuals to suppress their responses.

Figure 2: Group Members: Innovation Network, Level III

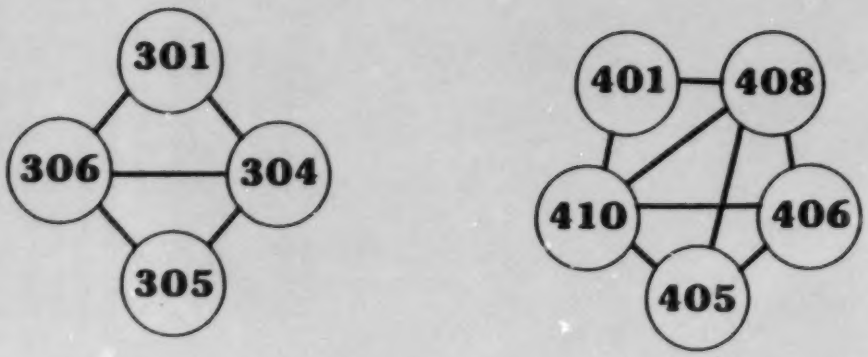
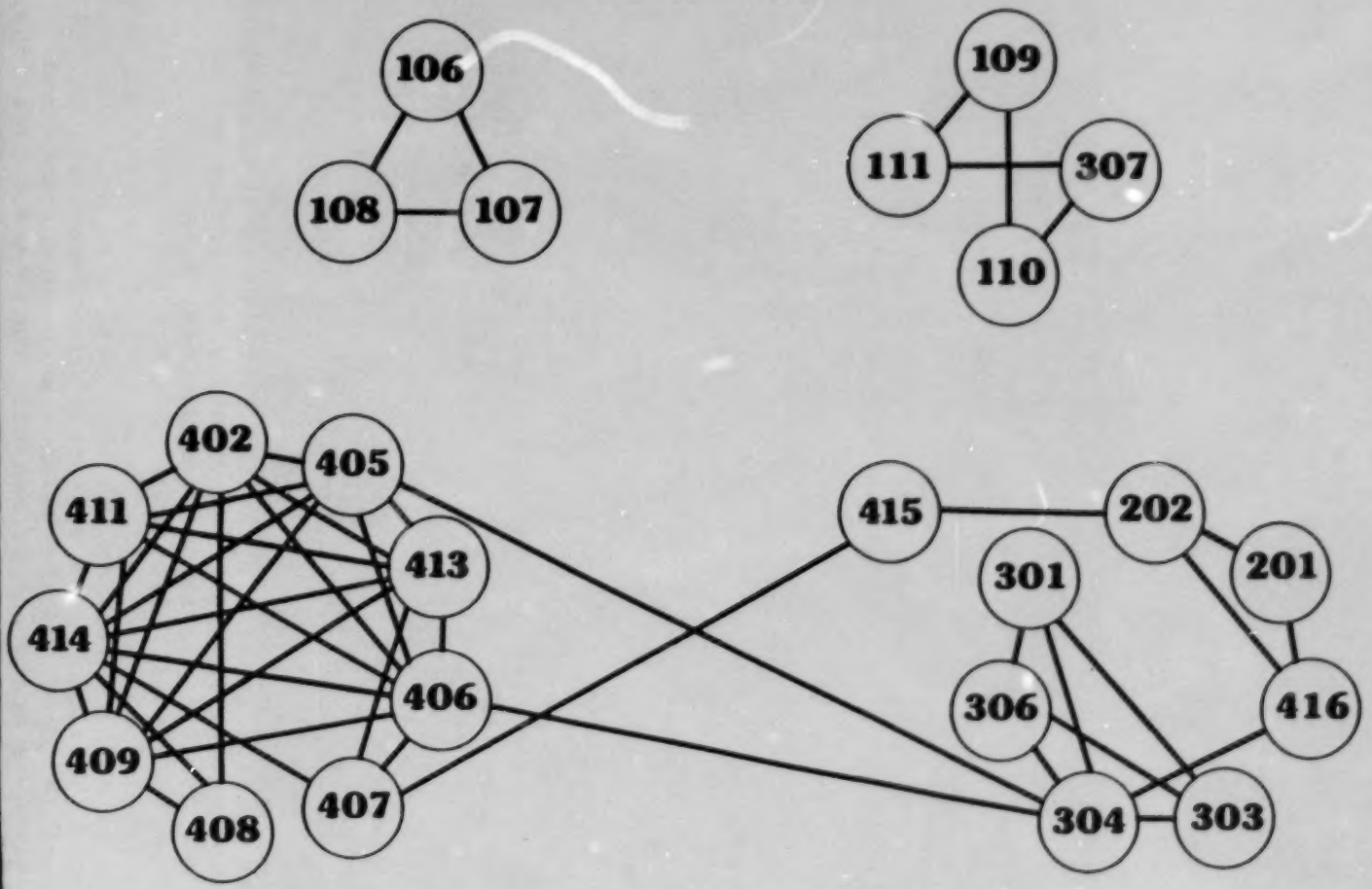


Figure 3: Group Members: Social Network, Level II



Once again the bulk of social contact occurs among federal personnel, technical assistance staff, and consultants. At Level II, four distinct groups emerge. One group consists of nine federal personnel who are also cliqued in the Task network and the Innovation network. A second group consists of three State Facilitators and a technical assistor. A third group consisting of seven individuals is a weakly-connected joining of members of the support center clique seen before, with two Developer/ Demonstrators from the same project and a regional manager of federal dissemination programs. Three SFs form the last small grouping.

The network analysis shows clearly that individuals organizationally proximate to one another at the federal level and within technical assistance organizations are grouped on Task, Innovation, and Social lines. This point runs somewhat counter to the literature. Most research on network analysis has indicated that people choose different people to play these roles in their organizational lives. (Berlow, 1960; Denowski, 1974; Taylor, 1976). Typically a "socio-emotional" leader is conceived of performing a maintenance, stroking function. A task leader is conceived of as promoting productivity. And an innovation leader is seen as burrowing around, scaring up enthusiasm for new ideas. It has been argued that these roles are inconsistent with one another. In the case of the NDN, the same individuals are task, innovation and social leaders. This finding may relate to the peculiar responsibility of the NDN -- dissemination of innovations in a highly interpersonal way. On the other hand, the finding may represent a significant empirical challenge to conventional thought about the role and methods of authority of informal leaders.

Opinion Leadership

An opinion leader is an individual who, by virtue of the strength of his or her character and/or the authority of his or her position, leads the system. It was once thought that opinion leaders were a distinct breed from hierarchical leaders. However, it is clear that one of the key bases for moving ahead in organizations is the confidence others have in one's judgment. Other network analyses have shown that while substantial proportions of opinion leaders are not at the top, it is common for opinion leaders to attain high positions (Katz & Lazersfeld, 1955; Lazersfeld, Berelson & Guade, 1951).

We identified opinion leaders by asking respondents to check a box on a questionnaire if, in their judgement, a particular person "influences the ideas used, structures devised, priorities established, awards distributed, etc." for the NDN; there were 8,971 nominations of opinion leadership. Only 53 individuals were not nominated as opinion leaders, or were nominated only once. Of the unnominated individuals, 35 were Developer/Demonstrators, 14 were State Facilitators, and the balance were consultants and technical assistance brokerage personnel. The average individual

was nominated 28 times. We identify those individuals whose frequency of nomination exceeded 28 by two standard deviations. There were 28 such individuals; they ranged in the number of times they were nominated from 71 to 317.

To verify the fact that the opinion leaders were deeply imbedded in the system, an analysis of their link patterns was conducted. The typical opinion leader was not only nominated as such, but also had connection frequencies in all three networks greater than 2 standard deviations from the mean number of links. For the Task network, the average person had 29 links; for the Innovation network, the average person had 14 links; and for Social, the average person had 8 links -- that is, for those persons who had any links at all. By comparison, the group of opinion leaders averaged 61 Task links, 29 Innovation links, and 11 Social links, all differing significantly from the mean link frequency beyond the .05 level. For opinion leaders, the number of nominations exceeded their total number of contacts, indicating that their reputation as a leader extends beyond this direct communication environment. One opinion leader, in fact, while nominated 91 times, has but 17 links across all three networks. This individual was the senior federal official connected with the program. The individual nominated at the highest level, had 87 task links, 72 innovation links, 11 social links, and is the director of the program.

The identities of the opinion leaders speak to the success of the program of developing a grass-roots leadership model. The listed opinion leaders include the senior federal officials attached to the project. Of the 28 opinion leaders identified, 25% are federal personnel, a number consistent with the proportion of federal personnel in the NDN. Twenty-two percent are consultants, of which only one is a member of the educational materials support group, and one is a combination State Facilitator and technical assistance brokerage person. Seven opinion leaders are Developer/Demonstrators, all of whom are long-term affiliates of the NDN with practices that have enjoyed wide use and success. The remaining 25% consist of State Facilitators. An examination of these SFs indicates that they are geographically dispersed, not necessarily representatives of larger states, but certainly ideological founders of the NDN. There is a clear relationship between the sophistication of a state's program and the leadership qualities of its SF project director within the NDN generally.

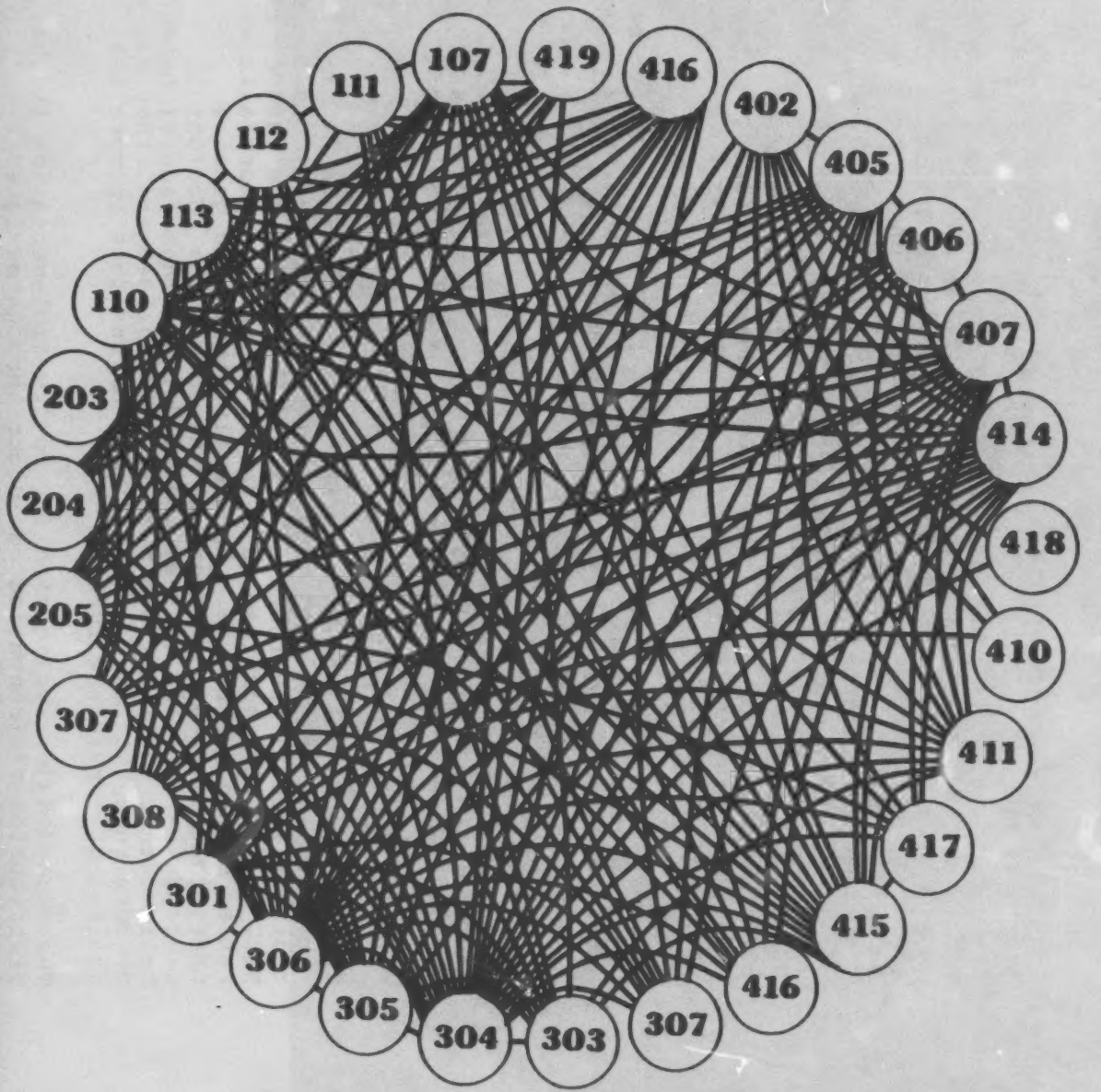
A moment should be taken to look at the 22%, or 6 individuals, who are consultants: generally, they do not participate in cliques. The consultants that individuals believe are opinion leaders include a major evaluation consultant, a colleague in an associated agency who worked for an educational development center, a methodologist in the study of the diffusion of innovations, a major leader in the efforts to keep the NDN before Congress, a southwestern technical assistance subcontractor, and one member of the educational materials center who also played a leading role in assisting the initial organization of the NDN.

The consultants play an important advisory role within the system. A look at the career pattern of these individuals indicates that by and large the advisory role either results from a sustained successful participation as an SF or a D/D, or a significant theoretical contribution to the dissemination theory which underlies the NDN. The connections of these individuals are equally strong among federal personnel and contractors. The individuals in some senses link both groups, not for purposes of transferring information between the groups as a liaison might, but to provide input to both. As Katz, Berelson and McPhee noted many years ago, there are several kinds of opinion leaders. A liaison opinion leader leads through the judicious selection of information to be passed among members of a system; this leader is a gatekeeper. An opinion leader with hierarchical authority leads by designating who may talk to whom, and thereby controls communication. A third kind of as opinion leader leads by providing new ideas, concepts, and criticism to which all members of the system must respond. The NDN consultants play this latter role. Their disproportionate importance to the system illustrates the willingness of the NDN to examine itself and change.

The pluralism of leadership across roles is remarkable. Those individuals who have brought the system ahead include participants from all major role groups. With few exceptions, they are not members of cliques and, as seen by the number of links the average leader maintains, they are deeply embedded in the system. They are uniquely capable of transmitting ideas from the bottom to the centers of authority, power, and decision-making. How are they connected to one another? Figure 4, we believe, says it all. The average opinion leader has 13 links to other opinion leaders on the Task network alone. By and large, the strengths of these links are greater than the strengths of the average link (2.6 versus 1.4, $p < .05$.) Not only are opinion leaders connected to the system, but they are powerfully connected to one another. We believe this is the strongest evidence of the degree to which this program has developed into an example of what is really meant by the concept of neofederalism. The federal government shares power, influence, and decision-making. The leaders are all in a position to influence one another as the program evolves. They are assisted by consultants and others who serve the system.

The network data overwhelmingly suggest characteristics of strong systemness. A hierarchy clearly exists, though flattened at the top. Federal personnel are key players. But they have shared their power with consultants and operational personnel from the SF and D/D ranks. This is an extraordinary political event. It's not merely that the contractors are executing policy; they are inventing it as time goes along. We believe that the effect of this process is a policy that conforms to the needs of program beneficiaries, has contributions from those beneficiaries over time, and reduces the net investment of the federal government.

Figure 4: Connections Among Opinion Leaders: All Levels, Task



This conjecture is borne out by the facts. It cost the government $66 million to develop 124 programs. In constant dollars, the equivalent cost today is approximately $198 million. The median program cost was $248,642. These programs are installed through the operation of the NDN in local schools at a cost to the federal government of between $4,000 and $5,000 per school. At the same time, school contributions, which typically combine federal and state revenues, can vary from $1 to $4300 per pupil per year. Median per pupil costs for 1979-80 were $12.

Conclusion

The results of this study indicate that the NDN is an important and successful example of federal-state-local collaboration. For several years, the government has sought ways of reducing the magnitude of federal involvement in local and state activities. By eliminating or reducing key programs, such as ESEA titles, the government has weakened local ability to comply with the law and provide service to local schools. The NDN shows that by assuming (1) people will act responsibly, (2) practitioners have the expertise to direct change, and (3) the federal government can play a coordinating role -- as opposed to power broker -- the federal government can effect significant change with relatively small resources.

The NDN is an integrated service delivery system. Over its eight years of existence, federal, state, and local school personnel have developed a system characterized by partnership, participation, and honorable exchange as collaborators in service to their clients. D/Ds, SFs, consultants, and federal staff have each developed and "institutionalized" their own role, and produced their own opinion leaders to speak on their behalf. That the distribution of opinion leaders across these roles is roughly even, is a marvelous demonstration of the effectiveness of grass-roots political systems to provide representative opportunity to participants.

The NDN should not, however, stand alone. There are implications for policy implementation generally. First, it should be clear that the federal government can share power. In the case of the NDN, the sharing occurred as a result of revenue shortfalls -- a rather common occurrence. Apparently the key to genuine participation is a commitment to the underlying ideological concepts -- a belief in what one is doing. When federal personnel believe that their actions have significant meaning, they may well be more ready to make political compromises that promote the quality of service delivery.

The second major implication for policy implementation is that the distribution of innovation can occur through designed communication networks. It has long been noted that ideas and novel objects are diffused through a culture as a result of a network of interpersonal relations. It has not been clear that nonparticipants can disturb, alter, or utilize cultured networks

to the advantage of a social goal or innovation. The NDN demonstrates that if opportunity is provided for the individuals to communicate, if participants are given some control over the character of the innovations diffused, and participants are key actors worthy of respect in their area of expertise, it is possible to construct an effective dynamic that leads to (but is not itself) a network. The network developer needs a set of goals, a method for identifying people who share those goals, a method for sorting from among those people the very best, funding to energize and coalesce a basic set of rules and specifications of relations, and subsequent opportunities for collaboration. As the NDN demonstrates, given a little direction, a group of committed adults can accomplish a great deal despite conflict, disagreement, and whatever negative consequences occur from the politics of their behavior.

The third major implication that should be drawn from the NDN experience is the importance of continuity. The NDN has been in business for eight years. With the exception of additional programs from Title I and Title IV-C services, its repertoire of D/D projects has been fairly constant. State Facilitator projects have changed hands, but only on rare occasions. The program has enjoyed sufficient continuity that its personnel have become good at what they do.

Those of us who have watched the NDN since its inception have observed the membership learning to discriminate effectively between probably successful and probably unsuccessful adopters -- thus learning to husband their resources. They have learned how to benefit from mistakes and from successes and how to disseminate successful dissemination practices within their community. NDN members have learned how to influence Congressional leaders through the action of nonfederal NDN participants. They have learned how to use their time together wisely. Continuity is certainly a key.

The fourth implication is the importance of joint planning. From the beginning, federal personnel have encouraged input from participants, experts in the field of dissemination, and educational scholars. The planning is indeed "messy," confused, discordant, but the results are not the least common denominator but rather commitments to activity that reflect the best the people had to offer. The keys are tolerance for ambiguity and patience.

The fifth implication is the importance of a reduced public role for the federal government. In all its publicity, activities, and communication, the NDN identified itself as a collaboration of local, state, and federal personnel. Its representatives to its audiences were not members of a federal bureaucracy, but members of the audience, or people the audience can identify with. This makes adoption psychologically easier; since the adopter can draw the conclusion that if the disseminator can do it, I can too. Furthermore, the adopter is not challenged to accept major federal ideological premises -- just a program for the classroom.

In concluding, we must ask how the concept of "NDN" can itself be disseminated and where. The "where" is "all across the government." We have argued that the NDN has the characteristics of a neofederalist policy program. The concept of neofederalism implies a reduction of federal regulation, a recognition of the interest of the central government in certain classes of local affairs, and a willingness to share authority and finding with regard to those classes of local affairs. A large number of federal policies aimed at causing change could benefit from the experiences of the NDN.

Among these are:

- Federal Mediation and Conciliation Services -- programs to establish joint labor-management councils in factories, industries, and regions;
- Commerce Department and Labor Department Job Development programs -- exemplary practices under CETA-administered projects, and regional Industrial Management Councils;
- Department of Energy Demonstration Projects -- projects established to demonstrate the viability of alternative energy sources, energy conservation, and community energy planning;
- Small Business Administration Research and Development -- projects and activities supporting minority enterprise;
- Health and Human Services public health and disease eradication projects -- these have long been treated as separate innovations to be diffused; what the NDN might teach the National Institute of Health and its affiliated agencies is the efficacy of placing a large number of preventative public health programs under the same administrative umbrella;
- The Federal Food and Drug Administration -- development of standard tests and methodologies for studying and introducing drugs;
- The Federal Transportation Administration -- demonstration projects in highway safety, traffic control, maintenance of transportation systems, and urban suburban mass transportation;
- U.S. Army Corps of Engineers -- flood control and water conservation demonstration projects, water-way system management projects, and environmental impact review practices;
- Office of Economic Opportunity -- demonstration projects and novel (nonjudicial) affirmative action practices for government, business, and industry;

- Federal Trade Commission/Civil Aeronautics Board of Interstate Commerce Commission -- demonstration projects and nonrestrictive industry cooperation practices in nonregulated industries; and

- Department of State -- demonstration practices and projects of effective methods of introducing refugees into communities.

The keys to adopting the NDN "formula" are:

- an umbrella federal agency,

- alternative practices that have been experimentally validated,

- quality control,

- a network of participants representing the diversity of opinion,

- opportunity for communities to explore alternatives,

- acceptance of funding contacts among participants and consumers, and

- an ideological commitment to excellence.

The NDN is a viable and successful service delivery system. It provides opportunities for local schools to adopt and implement a wide variety of innovative educational practices at low cost. The NDN offers insight into how we might develop our relationships between the agencies of our government. Further review is suggested.

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Appendix A

FORM APPROVED
FEDAC NO. 50067
App. Exp. 06180

NDN Census Instrument

Section 1

From your own perspective, rank order the following twelve goal statements in terms of: a) how important they are to the U.S. Office of Education, and b) how important they are to your own activities in association with your program. Place a "1" on the line next to the most important goal, a "2" next to the second most important goal, etc., until all twelve goals have been ranked. Remember to do this for both columns.

ITEM	*Important to me*	*Important to OE*
1. Improve student attitudes toward learning.		
2. Improve teachers' attitudes toward teaching.		
3. Assure the use of alternative practices and materials by teachers.		
4. Monitor and evaluate the effectiveness of the dissemination process.		
5. Increase local educators awareness of the availability of alternative practices and materials.		
6. Develop alternative practices and materials for elementary and secondary schools.		
7. Improve communication among educators.		
8. Raise achievement scores.		
9. Increase the adoption of alternative practices and materials.		
10. Build communication among dissemination contractors.		
11. Provide training and technical assistance to local schools.		
12. Replicate model programs (achieve "fidelity").		

13. How many years of education have you had beyond high school?

_____

14. How long has your work been funded by the NDN?

_____ months

_____ years

Section 2

We would like to ask you some questions about your work with the NDN, going back to when you were first funded.

a. When did you first begin to work in the NDN; that is, when you began to be salaried by the NDN?

(month) ____
(year) ____

b. How many times have you ever been a workshop or a group leader at conferences sponsored by the NDN?

(national conferences) ____
(regional conferences) ____

c. Did you ever attend a non-NDN out-of-state convention (e.g., ASCD, AERA, AASA, etc.) as a direct result of your NDN activities?

(yes) ____
(no) ____

d. *IF YES*, what percent of your expenses were paid by your NDN project?

____
(percent)

e. Has your participation in the NDN provided you with an opportunity to publish your thoughts or views other than as indicated above?

(yes) ____
(no) ____

f. Have you ever been invited to Washington to present your views to the Office of Education?

(yes) ____
(no) ____

g. Do you provide leadership in NDN?

(yes) ____
(no) ____

h. Do you annually upgrade and/or change the materials you use in providing services to your clients?

(yes) ____
(no) ____

i. Does your work with the NDN provide you with a sense of personal satisfaction?

(yes) _____
(no) _____

j. Does your work with the NDN provide you with opportunities for professional growth?

(yes) _____
(no) _____

k. Does your work with the NDN provide you with opportunities for personal growth?

(yes) _____
(no) _____

Looking at your own (Yes) answers, enter the letter which indicates the item you feel most contributes to your own professional motivation, then enter the item that contributes second most to your professional motivation.

(most) _____
(second most) _____

System Communication

Section 3

You communicate whenever you talk with someone on a face-to-face basis, use the telephone, or write or read a letter or memo. We would like you to describe your communication contacts with other NDN personnel. The results of this part of the study will allow the construction of an overall "map" of information flow in the NDN.

On the pages that follow, the names of some 350 people who have been associated with the National Diffusion Network are arranged alphabetically. A preliminary identification number is next to each name: a final number will be assigned by the evaluation staff to keep your replies confidential. However, in order to avoid problems caused by personnel changes, we need to verify that the person to whom this questionnaire is sent is the one who completes the form. Therefore, please write your name on the first page of the questionnaire. No one besides the research staff will have access to your individual reply. Without your name, your data cannot be used to construct the communication network.

THERE ARE FOUR COLUMNS NEXT TO THE NAME OF EACH PERSON. EACH OF THE FIRST THREE COLUMN HEADINGS REFERS TO A DIFFERENT TOPIC OF PROFESSIONAL COMMUNICATION YOU MIGHT HAVE HAD WITH A COLLEAGUE. THE TYPES OF COMMUNICATION TOPICS ARE DEFINED AS FOLLOWS:

COLUMN I: A discussion related to ongoing aspects of your work in the NDN.

COLUMN II: A discussion related to new ideas and new school practices.

COLUMN III: A discussion about topics not directly related to your work.

We are interested in finding out from whom you sought and/or received information about these communication topics -- this could have been on a face-to-face basis, by telephone, or by written memo.

INDICATE THE FREQUENCY WITH WHICH YOU HAVE COMMUNICATED WITH EACH PERSON ON THE LIST ABOUT EACH TOPIC, WHERE:

0 = no communication about that topic within the last three years

1 = about once a year

2 = about once a month

3 = about once a week

4 = about once a day

COLUMN IV: In the far right-hand column, we would like you to indicate whether, in your judgment, a given individual is an opinion leader in the NDN. If you think some person is an opinion leader (e.g., influences the ideas used, structures devised, priorities established, awards distributed, etc.), just put a check in the space adjacent to this individual's name, whether or not you communicate with the person directly.

Although this may seem like a formidable task, it can be done quite quickly. You won't have communicated with every person on the list, so many names will be left blank. This list is organized by type of person (SFs, D/Ds, TAB coordinators, Ed Material staff, Federal personnel, Regional Department of Education Dissemination staff, and "Others".) The lists are alphabetized within these groupings. I recommend that you first briefly scan the lists to see who's on each one and then pass carefully through each section, providing the information as required.

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

PLEASE SIGN YOUR NAME HERE

STATE FACILITATORS	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
	FREQUENCY			
	Amount	Amount	Amount	
Charles Achilles, Tennessee				
Glen Arrants, North Carolina Facilitator Center				
Peter Bachmann, Delaware				
Ira Barkman, California				
Richard Barnes, North Carolina Facilitator Center				
Gordon Behm, Ohio				
Glendon Belden, New Hampshire				
Phyllis Betz, Virgin Islands				
Jerome Brock, Mississippi				
Maxine Brown, Northeast Reg. Ed. Cen., North Carolina				
Travis Brown, Reg. XVII Ed. Ser. Cen., Texas				
James Buckner, South Carolina				
Frank Buell, Reg. XI Ed. Ser. Cen., Texas				
Robert Byrd, SW Facilitator Ser., North Carolina				
Betty Child, Reg. XX Ed. Ser. Cen., Texas				
James Christianson, N. and Cent. Minnesota Facil. Proj.				
Deborah Clemmons, Michigan				
John Collins, Massachusetts				
Jim Connett, Kansas				
William Connett, Montana				
Madalyn Cooke, Reg. II Ed. Ser. Cen., Texas				
Samuel Corsi, New York				
Bill Curzie, New Jersey				
Brenda Dail, Cent. Reg. Ed. Cen., North Carolina				
Gene Dickson, South Dakota				
John Donovan, New York				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

	STATE FACILITATORS	I Communicate about *MY NDN WORK* FREQUENCY Amount	II Communicate about *NEW IDEAS* FREQUENCY Amount	III Communicate about *SOCIAL TOPICS* FREQUENCY Amount	IV *OPINION LEADER?* (Place a check in the correct space.)
	Margaret Faber, Reg. X Ed. Ser. Cen., Texas				
	Grace Fairlie, New York				
	Jose Figueroa, Puerto Rico				
	Patrick Flanagin, Arkansas				
	Robert Francis, New Jersey				
	George Glasrud, Wisconsin				
	Mary Gunter, Arkansas				
	R. Meade Guy, Alabama				
	William Halliern, New York				
	Raymond Hartjen, Maryland				
	Carrie Helm, Reg. XIII Ed. Ser. Cen., Texas				
	Amy Heintz, Nevada				
	Henry Helms, North Carolina Division of Development				
	Charlie Henderson, Reg. IV Ed. Ser. Cen., Texas				
	Leroy Hendricks, Reg. VIII Ed. Ser. Cen., Texas				
	Foster Hoff, New York				
	Vonell Huit, Reg. XV Ed. Ser. Cen., Texas				
	Gene Johnson, N. and Cen. Minnesota Facilitator Project				
	Evelyn Jones, New York				
	Hugh Jones, Pennsylvania				
	India Lynn King, Georgia				
	Robert King, New York				
	Lily Kliot, New Mexico				
	Hank Landeis, North Dakota			03	
	Diane Lassman, SE Minnesota Facilitator Project				
	David Lidstrom, Iowa				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

STATE FACILITATORS	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
	FREQUENCY			
	Amount	Amount	Amount	
Jim Linder, Virginia				
Ted Lindley, Idaho				
Kenneth Lindsay, Utah				
Robert Maniss, Reg. XIV Ed. Ser. Cen., Texas				
Patrick Martin, Texas Ed. Agency				
Martin McConnell, Tennessee				
George McDonough, Rhode Island				
Carolyn McNally, Connecticut				
Shirley Menendez, Illinois				
Kellett Min, Hawaii				
Sara Murphy, Arkansas				
Ted Newell, Indiana				
Joseph O'Brien, Vermont				
James Owens, Louisiana				
Mike Owens, Reg. VII Ed. Ser. Cen., Texas				
John Padgett, Kentucky				
May Lou Palmer, Nebraska				
Eleanor Peck, New York				
Dick Pedee, Oregon				
Richard Peterson, ESCU Office, Minnesota Facil. Proj.				
Art Phillips, Reg. IX Ed. Ser. Cen., Texas				
Bill Powell, Reg. III Ed. Ser. Cen., Texas				
Robert Raub, New York				
Mary Reynolds, Reg. XIII Ed. Ser. Cen., Texas				
Rosemary Richards, Reg. XII Ed. Ser. Cen., Texas				
David Robinson, Reg. III, Arkansas				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

	STATE FACILITATORS	I Communicate about *MY NDN WORK* FREQUENCY Amount	II Communicate about *NEW IDEAS* FREQUENCY Amount	III Communicate about *SOCIAL TOPICS* Amount	IV *OPINION LEADER?* (Place a check in the correct space.)
	Sylvia Rodriguez, Puerto Rico				
	Jolene Schulz, Missouri				
	Allan Scott, Florida				
	Bob Shafto, Maine				
	Jack Shelton, Reg. Reg. XV; Ed. Ser. Cen., Texas				
	Collene Simmons, Reg. V Ed. Ser. Cen., Texas				
	Alan Sinclair, Rhode Island				
	Kenneth Smith, Oklahoma				
	Kenny Smith, West Virginia				
	Richard Solomon, New York				
	Josephine Spaulding, So. Cen. Reg. Ctr., No. Carolina				
	Charlene Stogsdill, Wyoming				
	Arthur Sullivan, New York				
	Carolyn Trohoski, Pennsylvania				
	Duane Webb, Colorado				
	Joe Webb, SE Reg. Facilitator Cen., North Carolina				
	L. Leon Webb, Arizona				
	Charles Weed, New York				
	Bill Whitfield, Reg. XVIII Ed. Ser. Cen., Texas				
	Betty Williams, Alaska				
	Susan Williams, District of Columbia				
	Keith Wright, Washington				
	Everett Youngblood, Reg. VI Ed. Ser. Cen., Texas				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

DEVELOPER/DEMONSTRATORS	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
	FREQUENCY			
	Amount	Amount	Amount	
Judith Alamprese: N.Y. EXTERNAL H.S. DIPL. PROJ.				
Peggy Albrecht: PRECISION TEACHING PROJECT				
Jeanette Alder: INDIV. LANGUAGE ARTS				
Darvel Allred: MATCHING ATTITUDES				
Donald Alwes: RE-ED SCHOOL OF KENTUCKY				
Terry Applegate: CRITICAL ANALYSIS & THINKING				
Ruth Arnaud: PROJECT LEARNING DISABILITIES				
Sherry Avena: MODEL CLASSROOMS				
Ralph Bailey: CHILD STUDY CENTER *and* DEVELOPMENTAL PLAY				
Dorothy Barber: TRENTON FOLLOW THROUGH				
Dianne Barr-Cole: INDIV. BILINGUAL INSTRUCTION				
Ray Beck: PRECISION TEACHING PROJECT				
Betty Benjamin: ADDED DIMENSIONS				
Marjorie Benz: BASIC SKILLS IN READING				
Diane Bert: PARENT READINESS ED. PROJECT				
Phyllis Big Left Hand: N. CHEYENNE FOLLOW THROUGH				
Virgie Binford: RICHMOND FOLLOW THROUGH				
Marie Blackburn: SIMS				
W. C. Blackmore: PROJECT READING IMPROVEMENT				
Wes Bodin: RELIGION IN HUMAN CULTURE				
Rosalinda Bonilla: CORPUS CHRISTI FOLLOW THROUGH				
Joan Bonsness: NORTHWEST SPECIAL EDUCATION				
Harry Bowen: WAUKEGAN FOLLOW THROUGH				
Olivia Braun: STRAT. IN EARLY CHILDHOOD EDUCATION				
Jeanette Brown: AKRON FOLLOW THROUGH				
Judy Brown: ALPHAPHONICS				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

	DEVELOPER/DEMONSTRATORS	I Communicate about *MY NDN WORK* — FREQUENCY Amount	II Communicate about *NEW IDEAS* — FREQUENCY Amount	III Communicate about *SOCIAL TOPICS* — FREQUENCY Amount	IV *OPINION LEADER?* (Place a check in the correct space.)
	Ernest Burkman: ISIS				
	Ed Cammack: PROGRAMMED TUTORIAL READING				
	Esther Campbell: AIRS				
	Martha Carr: MATTESON 4D				
	Sally Jo Case: PERSONALIZED INSTRUCTION				
	Carita Chapman: INTENSIVE READING IMPROVEMENT PROGRAM				
	Karen Chatham: EXPERIENCE-BASED CAREER EDUCATION, FWL				
	Bessie Chumley-Jones: INDIANAPOLIS FOLLOW THRU				
	Anna Ciszochowki: IRIT				
	Tom Clark: PROJECT SKI*HI				
	Jane Connett: PROJECT DEEP				
	Linda Creech: PROJECT EQUALITY				
	Lucille Cummings: PROJECT CONQUEST				
	Ron Curtis: PROJECT DISCOVERY *and* MEDIA NOW				
	Stewart Darrow: IND. SCIENCE INST. SYSTEM				
	Karen Davis: RUTLAND CENTER				
	Allen Dornseif: MATTESON 4D				
	June Douglas: WEEKSVILLE FOLLOW THROUGH				
	Amanda Elzy: LEFLORE COUNTY FOLLOW THROUGH				
	Nancy Evans: SCHOOL HEALTH CURRIC. PROJ.				
	Ed Ezar: INDIVIDUALIZED LANGUAGE ARTS				
	Nathan Farber: EARLY CHILDHOOD PREVENTIVE CURRICULUM				
	Naomi Feldheim: MCHP/VIP				
	Mary Alice Felleisen: PROJECT COPE				
	Margaret Finn: ALTERNATE LEARNING PROJECT				
	Diane Flint: PROGRAMMED TUTORIAL READING				

DIRECTIONS

COLUMN DEFINITIONS

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COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

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4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

DEVELOPER/DEMONSTRATORS	I Communicate about *MY NIM WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
	FREQUENCY			
	Amount	Amount	Amount	
Karen Fuko: POLLUTION CONTROL ED. CENTER				
Joel Geller: PROJECT HEAR				
Bill Gibbons: HOSTS				
Phillip Glossa: LEARNING TO READ BY READING				
Debra Glowinski: CADPP				
Art Goldhammer: ECOS TRAINING INSTITUTE				
Jeanne Gray: GAMES CHILDREN PLAY				
Bill Guise: PROJECT ECOLOGY				
Peter Hainsworth: PROJECT ERIN				
Carma Hales: U-SAIL				
Marvin Hammerback: PROJECT SHARE				
Michael Hanes: COGNITIVELY ORIENT. PRESCHOOL				
Barbara Hanson: PIMA CO. CAREER GUIDANCE				
Fay Harbison: PROJECT CATCH-UP				
Alta Harness: CONCEPTUALLY ORIENTED MATHEMATICS				
Phillip Harris: PROGRAMMED TUTORIAL READING				
Jean Hauser: PROJECT CREATION				
Alice Hayden: PROG. CHILD. WITH DOWN'S SYN. COMMUNICATIONS PROGRAMS				
Harold Henderson: EXPERIENCE-BASED CAREER EDUCATION, ALL				
Matthew Hickey: PROJECT KARE				
Laura Higgins: ECOS TRAINING INSTITUTE				
Orval Hillman: LEARNING TO READ BY READING				
Marcelyn Hobbs: READING/ENGLISH NOTATION PROJECT				
John Hollifield: TEAMS-GAMES-TOURNAMENT				
James Howell: TEAM ORIENTED CORRECTIVE READING				
Rosemary Howell: GLASSBORO RIGHT-TO-READ PROJECT				

DIRECTIONS

COLUMN DEFINITIONS

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COLUMN III: Discussion about topics unrelated to your work (e.g., social)

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2. At least once a month
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4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

DEVELOPER/DEMONSTRATORS	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
	FREQUENCY			
	Amount	Amount	Amount	
Roland Huber: ELEMENTARY METRIC PROJECT				
Betty Igel: MODIF. OF CHILD. ORAL LANG.				
Carol Jackson: PROJECT HOME BASE				
Gerald[illegible] Jenkins: E. ST. LOUIS DIRECT INSTRUC.				
June Johnson: NEW ADVENTURE				
Chris Jones: OMBUDSMAN				
Marilyn Jones: OAKLAND FOLLOW THROUGH				
Karen Judkins: PROGRAMMED TUTORIAL READING				
Judy Judy: EARLY PREVENTION OF SCHOOL FAILURE				
John Kackley: POSITIVE ALTERNATIVES				
Mary Ann Kaczmar: DISCOVERY THROUGH READING				
Jon Kaiser: VOCATIONAL READING POWER				
Merle Karnes: PEECH				
Artie Kearney: ME/ME DRUG PREV[illegible]				
Verne Kelly: PROJECT I-C-E				
Wallace Kennedy: URBAN ARTS PROGRAM				
Ruth Khelseau: COMMUNITY SCHOOL 77 BRONX				
Deborah King: DEVELOPING MODELS FOR SPEC. ED.				
Susan Koen: PROJECT REAL				
John Lavender: OCCUPATIONAL VERSATILITY				
Jeanne Leffler: PROJECT CAP				
Robert Lentz: PROJECT ADVENTURE				
Stella Lewis: "GAMES CHILDREN PLAY"				
Virginia Lish: CAREER EDUCATION RESPONSIVE			1	
William Locke: CLINCH-POWELL ED. COOP.				
Ed Long: PEOPEL				

DIRECTIONS

COLUMN DEFINITIONS

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1. At least once a year
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3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

DEVELOPER/DEMONSTRATORS	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
	FREQUENCY			
	Amount	Amount	Amount	
Mary Macioci: PROJECT SEAPORT				
Marion Matelin: ECRI				
Charles Mathews: PUPIL/TEACHER INTERACTION				
Gloria Mattera: PROJECT CHILD				
Larry McClure: EXPERIENCE-BASED CAREER ED., NWL				
Michael Mello: READING INSTRUCTION AND PUPIL PERSONNEL SERVICES				
Richard Metteer: PROJECT SUCCESS SLD CHILD				
Carolyn Morphy: SEQUENTIAL PHYSICAL ED.				
Dan Moss: METRICS MADE EASY				
Charles Murphy: POLLUTION CONTROL ED. CENTER				
Thomas Nagel: SIGMA				
Jim Neeley: CATCH UP - KEEP UP				
Dorothy Neff: DISCOVERY THROUGH READING				
Bernadette O'Brien: TITLE I CHILDREN'S PROGRAM				
Eileen Ostergaard: VOCATIONAL READING POWER				
Allen Ouellette: ST. JOHN VALLEY BILINGUAL				
Martha Owens: EVERY CHILD A WINNER				
Charles Pelan: POSITIVE ATTITUDE TOWARD LEARN.				
Pauline Perazzo: PROJECT R-3				
Annie Ruth Perryman: PROJECT MARC				
June Poleski: ECRI				
David Randall: SECONDARY CREDIT EXCHANGE PROGRAM				
Ethna Reid: EXEMPLARY CENTER FOR READING INSTRUCTION				
Helen Reichman: CHILD DEVELOPMENT CENTER				
Jane Richardson: COMPUTER-BASED PLAN. RESOURCE				
Audrey Ross: SCHOOL VOLUNTEER DEVELOP. PROJ.				

DIRECTIONS

COLUMN DEFINITIONS

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COLUMN III: Discussion about topics unrelated to your work (e.g, social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

DEVELOPER/DEMONSTRATORS	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
	FREQUENCY			
	Amount	Amount	Amount	
John Ross: PROJECT EQUALITY				
John Rowe: CURRIC. FOR MEET. MODERN PROBS.				
Matthew Scaffa: DIAGNOSTIC PRESCRIPTIVE ARITH.				
Sue Schillinger: FOCUS DISSEMINATION PROJECT				
Ben Schofield: PROGRAMMED TUTORIAL READING				
Arlene Schor: PERCEPTION+				
Robert Schramm: STRATEGIES IN EARLY CHILDHOOD EDUCATION				
Robert Scobie: PROJECT REAL				
Leontine Scott: PHILADELPHIA FOLLOW THROUGH				
Louise Sears: TITLE I REMEDIAL READING PROG.				
Donald Sension: DEMONSTRATION EVALUATION CENTER				
Alan Sentowski: ADULT PERFORMANCE LEVEL PROJ.				
Glyn Sharpe: SIAM				
David Shearer: PORTAGE PROJECT				
Elaine Shelton: ADULT PERFORMANCE LEVEL PROJ.				
Audrey Simmons-Martin: CENTRAL INSTITUTE FOR THE DEAF EARLY ED. PROJECT				
Marie Sinclair: PEGASUS-PACE				
Robert Slavin: STUDENT TEAM LEARNING				
Corinne Smith: ECRI				
Lee Smith: RELIGION IN HUMAN CULTURE				
Kathryne Sowinski: A CHANCE FOR EVERY CHILD				
Betty Spann: PROJECT CONQUEST				
Carl Spencer: PROJECT INSTRUCT				
H. Mark Stanwood: ELSMERE PROJECT				
Gilbert Stevenson: GEMS				
Roberta Stiles: TALK				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

DEVELOPER/DEMONSTRATORS	I Communicate about *MY NDN WORK* (FREQUENCY Amount)	II Communicate about *NEW IDEAS* (FREQUENCY Amount)	III Communicate about *SOCIAL TOPICS* (Amount)	IV *OPINION LEADER?* (Place a check in the correct space.)
Louise Stern: INSTITUTE POLITICAL/LEGAL ED.				
Clarence Stone: HIT: HIGH INTENSITY TUTORING				
Mattie Story: KANSAS CITY FOLLOW THROUGH				
Dorothy Strong: PRE-ALGEBRA DEVELOPMENT CENTERS				
Mary Ann Swanson: VOCATIONAL READING POWER				
Torry Piazza Templeman: TEACHING RESEARCH				
Frank Thompson: ECOS TRAINING INSTITUTE				
Candace Tobin: BASIC				
Melba Treaster: PRIOR				
Nick Topougis: CAREER DEVELOPMENT PROGRAMS				
Rick Tully: PROJECT KARE				
Thomas Vodola: PROJECT ACTIVE				
Ione Waite: TULARE FOLLOW THROUGH				
Linda Waitkus: NEW JERSEY WRITING PROJECT				
Sara Waldrop: TALENTS UNLIMITED				
Kitty Wallen: INSTITUTE POLITICAL/LEGAL ED.				
Ron Ward: COMPREHENSIVE SCHOOL MATH.				
Sue Ward: PROGRAMMED TUTORIAL READING				
Bob Warpinski: PROJECT I-C-E				
Willetta Weatherford: DAYTON DIRECT INSTRUCTION				
Hilde Weisert: LEARNCYCLE				
Luceille Werner: EARLY PREVENT. OF SCHOOL FAILURE				
Herbert White: CALIFORNIA MINI CORPS				
Linda Wilson: OKLAHOMA CHILD SERVICE				
Marion Wilson: PARENT-CHILD EARLY ED. PROGRAM				
Maurine Winterton: ECRI				

	DEVELOPER/DEMONSTRATORS	I Communicate about *MY MDN WORK* FREQUENCY Amount	II Communicate about *NEW IDEAS* Amount	III Communicate about *SOCIAL TOPICS* Amount	IV *OPINION LEADER?* (Place a check in the correct space.)
	Marion Williams: FLINT FOLLOW THROUGH PROJECT				
	Dorothy Winter: WATERLOO FOLLOW THROUGH				
	Elaine Wray: FAMILY ORI. STRUCT. PRESCH. ACTIVITY				
	Dallas Workman: PROGRAMMED TUTORIAL READING				
	Thomas Zuhlke: ACADEMIC IMPROVEMENT				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the MDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

	EDUCATIONAL MATERIALS/SUPPORT CENTER	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
		FREQUENCY			
		Amount	Amount	Amount	
	Karen Aziz, Far West Lab				
	Sharon Entwistle, Far West Lab				
	Paul Hood, Far West Lab				
	Janice Hunt, Far West Lab				
	Jan Kanzaki, Far West Lab				
	Diane McIntyre, Far West Lab				
	Shirley Neill, Far West Lab				
	Fred Rosenau, Far West Lab				
	David Stucky, Far West Lab				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

	TECHNICAL ASSISTANCE BROKERAGE	I Communicate about *MY NDN WORK* FREQUENCY Amount	II Communicate about *NEW IDEAS* FREQUENCY Amount	III Communicate about *SOCIAL TOPICS* FREQUENCY Amount	IV *OPINION LEADER?* (Place a check in the correct space.)
	Ann Bennett, Texas RSU IV				
	Judy Brown, Far West RSU V				
	Dennis Collins, RSU I				
	Mary Ann Lachat, CAPLA CSU				
	Ellen Meier, RSU III				
	Marilyn Musumeci, CAPLA - TAB CSU				
	Lucy Nishikuni, RSU V				
	Gary Peevley, RSU II				
	Bonnie Rieman, RSU IV				

DIRECTIONS

COLUMN DEFINITIONS:

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

	OTHERS	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
		FREQUENCY Amount	Amount	Amount	
	Wilma Baily, Colorado SF Office				
	Adrianne Bank, Center for the Study of Evaluation, UCLA				
	Dick Brickley, Pennsylvania State Facilitator Project				
	David Crandall, The NETWORK, Mass.				
	Everett Edington, Rural Clearinghouse of ERIC				
	John Emrick, John Emrick Associates				
	Don Erickson, Early Childhood Clearinghouse				
	Fred Fifer, TAB Consultant				
	Gene Hall, Univ. of Texas, Research and Development Center				
	Susan Harris, Ed. Advisory Board, The NETWORK				
	Fred Hayen, The EXCHANGE, Univ. of Minnesota				
	Thel Kocher, NIE				
	Sue Loucks, Univ. of Texas, Research and Development Center				
	Irv Morrissette, Social Science Consortium, Boulder, Colorado				
	Jean Narayanan, Horace Mann Center, USOE				
	Evelyn Ogden, New Jersey State Dept. of Education				
	Harry Osgood, ACES, Connecticut State Facilitator Project				
	Ralph Parish, Consultant				
	Maynard Reynolds, University of Minnesota				
	Nancy Snidman, Center for the Study of Evaluation, UCLA				
	Ron Szypkowski, Magi				
	Peter Treadway, Evaluation Consultant, RMC				
	Stan Whitehead, Media Consultant				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

US DEPARTMENT OF EDUCATION	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
	FREQUENCY			
	Amount	Amount	Amount	
James Aven, Senior Diffusion Specialist, DER				
Anne Barnes, Diffusion Specialist, DER				
James Better, Diffusion Specialist, DER				
Ann Bezdek, Project Officer, OED				
Miriam Carliner, Senior Diffusion Specialist, DER				
Ellen Czeh, Program Assistant, DER				
Harry DeVanney, Deputy Director, DER				
Elreta Edmonds, Diffusion Specialist, DER				
John Evans, Assistant Commissioner, OED				
Richard Fairley, Assistant Commissioner, Title I				
Betty Fogg, Senior Diffusion Specialist				
Pat Gore, Project Officer, Follow Through				
Marty Gotowala, Policy Fellow, DER				
William Gruver, Senior Diffusion Specialist, DER				
Bill Harris, Program Specialist				
Sid High, Director, Career Education Program				
William Hinze, Senior Diffusion Specialist, DER				
Hattie Jackson, Diffusion Specialist, DER				
Mary Karavasilis, Junior Validation Specialist, DER				
Drew Lebby, Senior Diffusion Specialist, DER				
Helen McArthur, Dissemination Specialist, Title I				
Mary McMurrer, Program Assistant, DER				
Kathy Michaelian, Program Assistant, DER				
Joyce Murphy, Policy Fellow, DER				
Seymour Rubal, Senior Diffusion Specialist, DER				
Marshall Schmitt, Senior Diffusion Specialist, DER				

US DEPARTMENT OF EDUCATION	I Communicate about *MY NDN WORK* FREQUENCY Amount	II Communicate about *NEW IDEAS* Amount	III Communicate about *SOCIAL TOPICS* Amount	IV *OPINION LEADER?* (Place a check in the correct space.)
Bill Swan, Project Officer, BEH				
Don Twiford, Chief, Facilitation Branch, DER				
Lew Walker, Chief, Devel. and Inst. Branch, DER				
Lee Wickline, Acting Director, DER				
Thomas Wikstrom, Senior Diffusion Specialist				
Allen Wills, Project Officer, Follow Through				
Rosemary Wilson, Director, Follow Through				

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to your work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

DIRECTIONS

COLUMN DEFINITIONS

COLUMN I: Discussion about ongoing aspects of your work with the NDN

COLUMN II: Discussion about new ideas or new school practices

COLUMN III: Discussion about topics unrelated to you work (e.g., social)

CONTACT ESTIMATES

1. At least once a year
2. At least once a month
3. At least once a week
4. At least once a day
5. More than once a day

IF NO COMMUNICATION, PLEASE LEAVE BLANK.

REGIONAL DISSEMINATION SPECIALISTS	I Communicate about *MY NDN WORK*	II Communicate about *NEW IDEAS*	III Communicate about *SOCIAL TOPICS*	IV *OPINION LEADER?* (Place a check in the correct space.)
	FREQUENCY			
	Amount	Amount	Amount	
Harold Haswell, ROEP, Region VI				
Nicholas Hondrogen, RUEP, Region I				
Edward Larsh, ROEP, Region VIII				
John Lovegrove, ROEP, Region IV				
Robert Radford, ROEP, Region X				
W. Roberts Richmond, ROEP, Region III				
John Sasuta, ROEP, Region V				
Harold Smith, ROEP, Region II				
Warren Tappin, ROEP, Region IX				
James Tumy, ROEP, Region VII				

Anybody else with whom you communicate about these topics, or recognize as a leader?

		I	II	III	IV
		Communicate about *MY NDN WORK*	Communicate about *NEW IDEAS*	Communicate about *SOCIAL TOPICS*	*OPINION LEADER?* (Place a check in the correct space.)
		FREQUENCY			
		Amount	Amount	Amount	

Appendix B

Table A

Raw and Converted (x) Ranks - Individual's Goals

	All	Federal Staff	D/Ds	SFs	Technical Assistants
1. Improve student attitudes toward learning	(1) 4.5	(1) 4.5	(1) 3.6	(4) 5.10	(9) 7.8
2. Improve teacher attitudes toward teaching	(3) 4.7	(4) 5.5	(2) 4.1	(3) 4.8	(8) 6.5
3. Assure the use of alternative practices and materials by teachers	(6) 6.3	(8) 6.1	(6) 6.3	(7) 6.8	(6) 5.6
4. Monitor and evaluate the effectiveness of dissemination process	(8) 7.0	(6) 5.5	(9) 7.2	(10) 7.7	(5) 5.3
5. Increase local educators' awareness of the availability of alternative practices and materials	(2) 4.6	(3) 5.3	(4) 5.5	(1) 3.1	(1) 3.5
6. Develop alternative practices and materials for elementary and secondary schools	(11) 8.0	(11) 8.0	(10) 7.3	(12) 9.5	(10) 7.7
7. Improve communications among educators	(10) 7.3	(10) 7.6	(11) 8.0	(6) 6.6	(4) 5.1
8. Raise achievement scores	(7) 6.9	(2) 4.8	(7) 6.7	(9) 7.6	(11) 9.0
9. Increase the adoption of alternative practices and materials	(5) 5.7	(6) 5.9	(5) 6.0	(5) 5.3	(2) 5.0
10. Build communication dissemination contractors	(12) 9.2	(12) 8.8	(12) 9.9	(11) 9.1	(7) 5.9

	All	Federal Staff	D/Ds	SFs	Technical Assistants
11. Provide training and technical assistance to local schools	(3) 4.7	(5) 5.8	(3) 4.7	(2) 4.1	(2) 5.0
12. Replicate model programs (achieve "fidelity")	(9) 7.2	(9) 6.4	(8) 7.1	(8) 7.0	(12) 9.3

Appendix B

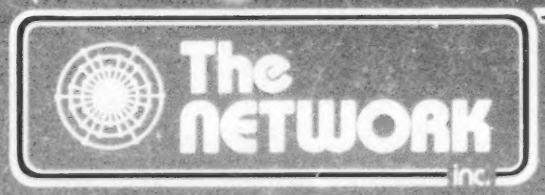
Table B

Raw and Converted (x) Ranks - Perceived Federal Goals

	All	Federal Staff	D/Ds	SFs	Technical Assistants
1. Improve student attitudes toward learning	(11) 7.8	(6) 6.3	(10) 7.7	(12) 8.8	(10) 7.7
2. Improve teacher attitudes toward teaching	(12) 8.1	(9) 7.2	(12) 8.2	(10) 8.6	(9) 7.6
3. Assure the use of alternative practices and materials by teachers	(4) 6.3	(4) 5.5	(6) 6.7	(5) 6.2	(3) 5.3
4. Monitor and evaluate the effectiveness of the dissemination process	(5) 6.4	(8) 7.0	(4) 5.3	(4) 4.5	(7) 6.1
5. Increase local educators' awareness of the availability of alternative practices and materials	(2) 4.3	(2) 5.3	(3) 4.8	(2) 4.3	(2) 4.5
6. Develop alternative practices and materials for elementary and secondary schools	(5) 6.8	(10) 7.2	(7) 7.0	(6) 6.3	(6) 6.0
7. Improve communication among educators	(10) 7.8	(11) 7.4	(9) 7.3	(11) 8.7	(12) 8.5
8. Raise achievement scores	(7) 6.53	(2) 4.8	(1) 4.1	(7) 7.0	(9) 5.6
9. Increase the adoption of alternative practices and materials	(1) 4.2	(6) 5.9	(2) 4.7	(1) 3.9	(1) 3.4
10. Build communication among dissemination contractors	(9) 7.7	(12) 8.8	(12) 8.3	(7) 7.0	(11) 8.1

Table B
Raw and Converted (x) Ranks - Perceived Federal Goals

	All	Federal Staff	D/Ds	SFs	Technical Assistants
11. Provide training and technical assistance to local schools	(6) 6.5	(5) 5.8	(7) 6.5	(7) 7.0	(8) 6.9
12. Replicate model programs (achieve "fidelity")	(3) 4.8	(9) 6.4	(5) 5.8	(2) 4.4	(5) 5.8



290 South Main Street, Andover, Massachusetts 01810